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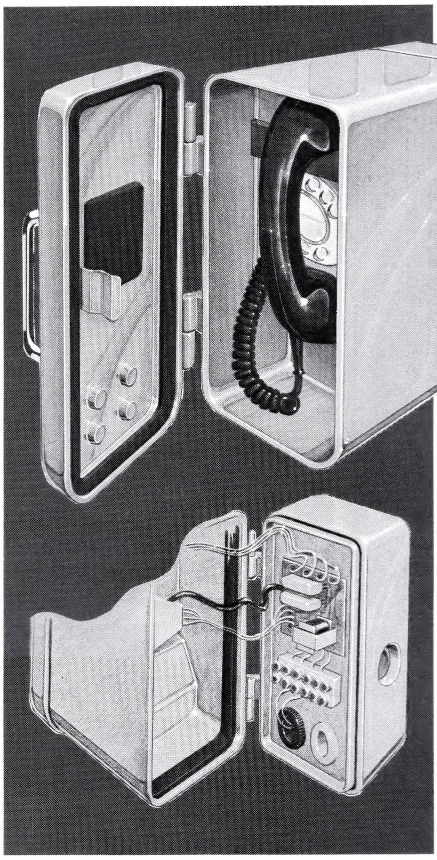

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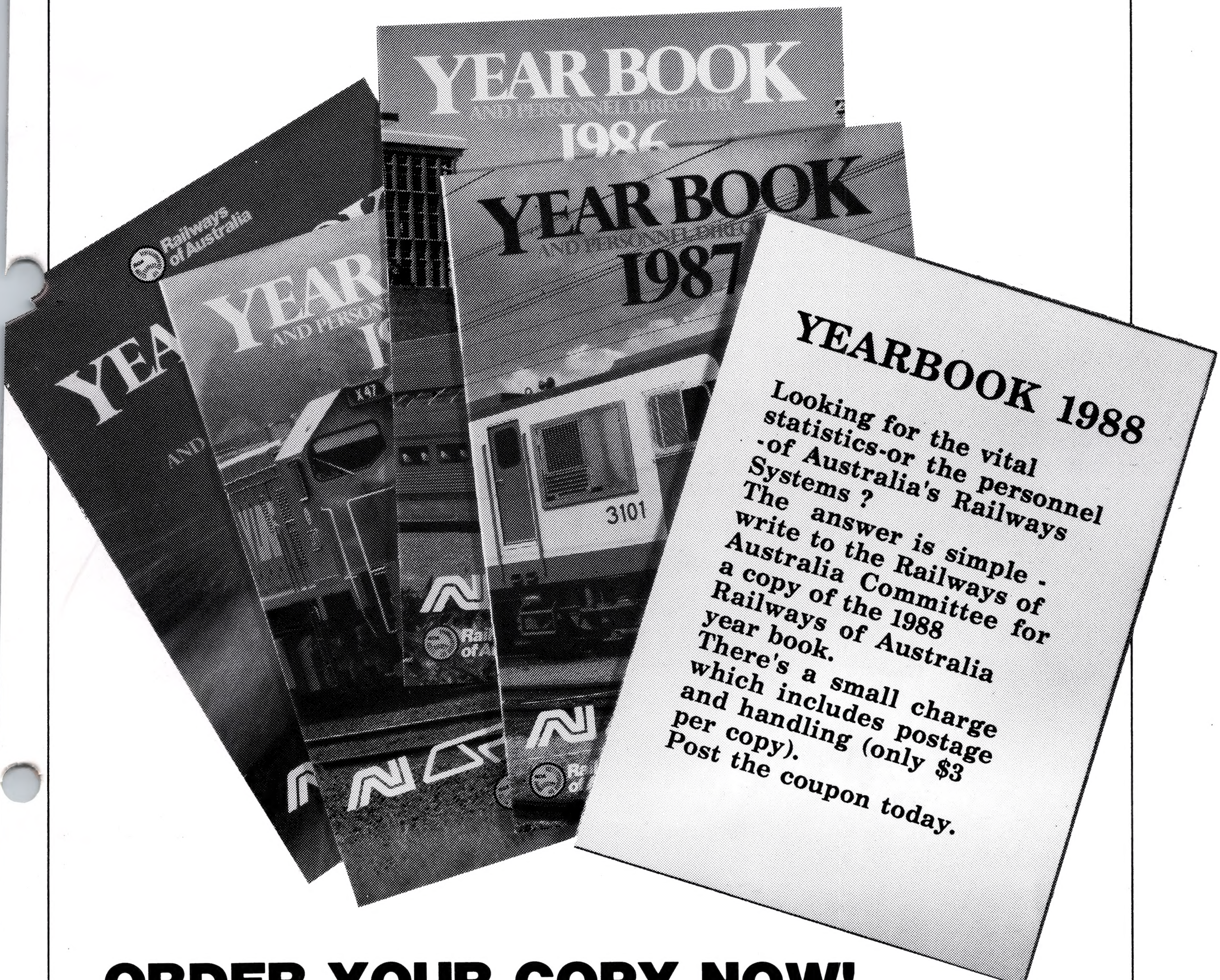
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NETWORK
THE RAILWAYS OF AUSTRALIA QUARTERLY

Volume 25, Number 2
April, May, June 1988

Bicentennial steam locomotive 3801 about to leave Sydney's Central Station on its first run in January 1988.

CONTENTS

LINERTRAINS looking good 7
PERTH's new railcars 12
HELLO 3000, goodbye Redhens 14
NEW Intercity trains for State Rail 18
TANGARA pampers Sydney 19
GRAND opera goes bush 24
VICTOR Harbor's fight back 34
LOU Marks sums up 41
NZ's Tranz-Alpine success 58

Executive Director's Column 6
Reviews 45
New Products and Processes 47
WindowSeat 49

Cover: Producer John McIntosh (left) and cameraman Lyle Binnie of Highland Productions shoot footage of the Queenslander between Cairns and Innisfail for the new ROA promotional video. Photograph: J. Thimios.

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- *State Transport Authority — Victoria (V/Line)*
- *Western Australian Government Railways (Westrail)*

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ENGINEERING THE FUTURE

M.C.G. SCHRADER

I recently had the opportunity of addressing the Bicentennial congress of The Institution of Engineers, Australia. Speakers were asked to give their views on where railways are heading, with particular reference to the engineering profession.

Preparation for the talk gave me cause to reflect on the great debt railways owe to engineers, and also on the need for change in some engineering attitudes if we are to survive as an Australian rail network providing a unified service to our customers.

On the debit side, we must recall that our rail gauge problems started with engineers. The engineering advisors to the private railway companies in Sydney and Melbourne could not agree on what should be the proper rail gauge for the Australian colonies. We all know the result of those decisions.

As rail developed, engineers had the professional background and training that allowed them to reach the highest management positions in railways, at a period when the emphasis was on machinery and technology rather than marketing. Engineers were our trained managers.

There are monuments to their skills throughout Australia; the great viaducts and lofty bridges carrying trains heavier than their designers could ever have imagined testify to their skills. The public is recognising the beauty of many railway buildings, which is sometimes a problem when modernisation must take place.

But I suggest that in engineering, as in all other occupations in the railway industry, the need for change is becoming evident. A noted rail historian, Mr R. L. Abbott, an engineer, tells of the development of superheated steam locomotives in Australia. He records that one Chief Mechanical Engineer of the old South Australian Railways stalled the adoption of a demonstrated improvement in locomotive performance through superheating for 12 years, largely because of his personal opinions.

Engineers, it is true, face something of a dilemma. If standardisation of any equipment occurs early in its development period, the opportunities for technological improvement are sometimes lost. If, on the other hand, testing goes on for a long time, then the opportunities for standardisation are lost.

But I suggest that as rail systems we must face up to, and resolve, differences that can harm our performance in the market. For example, if the bogies on a freight wagon are safe to run at 115km/h in one Australian system, why is it that another will restrict those same bogies to 80km/h although the topography and rail mass are the same?

Train-handling techniques provide another example. As trains, both passenger and freight, get longer and heavier, locomotive drivers require new handling skills. I find that attitudes towards train-handling techniques differ markedly between our systems. If one management sees the value of "power" or "stretch" braking, a North American technique designed to give passengers and freight a smoother ride, why is it not seen throughout Australia?

And just as skilled tradesman have found in the past that their trades have disappeared, so certain branches of railway engineering will alter so drastically as almost to disappear. A locomotive driver passing a green signal knows the track ahead to be safe, whether that signal is generated by double wires through double pulleys to a kerosene lamp or is sent from a computer by radio 500 kilometres away. The new technology is available, the mechanical skills once required will be replaced, and a group of our engineers will need to acquire new kinds of skills.

The need for change is clear. By their nature, railways will continue to rely heavily on the knowledge engineers bring to bear, and our Bicentennial year gives the opportunity to those skilled professionals to think about what lies along the track ahead.

TRACKS

NEWS FROM THE RAIL NETWORKS

IT'S NOT A SHIP, IT'S NOT A TRAIN, IT'S LINERTRAIN

Australia's state capitals were built around the country's ports, which provided access to domestic and international markets.

There were many shipping companies in the early days and few of them co-operated to reduce costs. Most of them regarded the railways as inefficient transporters to and from the docks.

Today, things are different. With rising operating costs, there are fewer ships, and they no longer service all the ports. Developments in rail and road transport have also reduced the amount of sea freight around the coast.

The railways have introduced a new concept in freight movement, with non-stop freight trains travelling at express speeds on regular schedules.

Gone are the days of small goods trains stopping and starting at every station and shunting wagons on and off at sidings.

Road transport offers a certain flexibility of service with load supervision by the driver, and is better for short hauls to and from the docks. Rail provides economical long distance overland hauls.

These changes have enabled the shipping companies to send freight by both land and sea. In fact, it pays them to move containers overland between ports rather than sail to every port.

Although Tasmania, the island state, is regularly serviced by sea, most of the ships sail to and from Melbourne. Tasmanian exports bound for Sydney and Brisbane, for example, are not shipped directly. They go to Melbourne and then by fast express train to the northern capitals.

Similarly, international ships do not call at every port. To reduce freight costs, they minimise the number of stops in Australia. It is cheaper if imports are received at one main port and despatched to other destinations by rail or road or a combination of these.

Combining with other shipping firms and sending whole trainloads of containers at lower rates makes much more sense.

In moving seagoing freight, the shipping companies have realised the need to maintain a steady flow of containers, maximising the advantages of each form of transport.

Containers are now used for transporting everything except bulk products like oil and grain.

Each year there are 2400 dockings at Melbourne's port terminals, some 1500 overseas ships and 900 coastal vessels coming into Australia's largest container handling port. They carry more than 550,000 containers, each 6.1 metres long.

With so much container traffic through Melbourne and on to the other mainland capitals, there is a need for a co-ordinating body to arrange rail and road transport for the shipping companies.

This is where the Linertrains Company comes in.

Linertrains is a joint-venture between the Australian Shipping Commission and the P & O (Pacific and Orient) group.

The commission itself runs a fleet of container ships and bulk carriers around Australia and New Zealand under the trading name of the Australian National Line (ANL). ANL ships also take the Australian flag around the world to Europe and Asia, including China and the Phillipines, Japan and Korea.

Above: Sea meets rail and road. Linertrains provides a complete cargo service through co-ordinating container movements on sea and land.

Left: Moving containers to shore. The Melbourne-Sydney Linertrain carries the equivalent of 51 standard containers and offers next-day delivery.

"It services the shipping industry and freight forwarders with a wealth of experience in container handling, including inventory management, the provision of container depots and container cartage to and from the terminals.

"It's a popular and worthwhile service, and with a big future."

ANL handles 500,000 containers a year through its terminals around Australia. The P & O group is also a major handler of seagoing freight.

Linertrains leases trains from V/Line and other rail systems and allocates wagon space to the shipping companies. It monitors transit times of all container consignments and issues a despatch notice indicating the type and timing of the freight movement.

The national manager of Linertrains, Andrew Young, says that, with his national computer link-up to offices in all mainland states, he is able to keep track of and deliver containers to any site at short notice.

"It doesn't pay to leave containers on the dock for another ship in a few days' time, nor does it pay to send a few containers at a time," Mr Young says.

Combining with other shipping companies and sending a whole train load of containers at a lower rate makes much better sense.

"Linertrains keeps cargo on the move, not on the wharf."

Linertrains acts as an agent for the shipping lines and uses their combined power in the market to get the best possible rates on rail and road.

"All shipping companies are assured of equal priority for wagon space, and we take the risk of sometimes not filling spaces on the trains," says Andrew Young.

"Through our services, administrative arrangements and communications between shipping lines are improved and simplified.

"We have become the communication channel for the shippers, who previously were unwilling or unable to get together and realise the relative advantages of each transport mode, while providing complete cargo care through co-ordinating container movements on sea and land."

The Linertrains now run on regular daily schedules between Sydney and Brisbane and Melbourne and Sydney, as well as Sydney-Newcastle. The Melbourne-Sydney return service began on 1 February this year.

The Sydney-Brisbane service has successfully reduced average transit times from 96 hours to 28 hours.

The Melbourne-Sydney Linertrain carries the equivalent of 51 standard containers, and it assures the shippers and other freight forwarders of next day delivery from the South Dynon terminal in Melbourne to the Sydney Haulage terminal.

This service connects to the Brisbane linertrain for next arrival at the E. A. Rocke terminal.

Linertrains is also considering a contract train service to Islington in Adelaide from Melbourne's South Dynon terminal. Linertrains now moves containers from the Melbourne waterfront to the Dynon terminal for despatch on the daily V/Line container train, the Contrainer, to the Adelaide docks.

"Linertrains is looking good," says Marinus Van Onselen, V/Line's Senior Marketing Manager for container freight.

FOURTEEN YEARS AND $480m LATER . . .

Fourteen years and $480 million after the Queensland Government's 1974 decision to provide an electric railway system for Brisbane, Transport Minister Ivan Gibbs commissioned the final section between Eagle Junction and Eagle Farm on the city's northside on 6 February 1988.

The opening marked the completion of 360km of electrified single track that handles 43 million passengers a year.

The growth of more than 65 per cent in passengers since the introduction of electric trains in 1979 vindicates the decision to electrify the metropolitan rail system.

The popularity of the electric cars, the first air-conditioned urban rolling-stock in Australia, has done much to revitalise rail travel in Brisbane.

The cars have wall-to-wall carpets, large tinted windows and seating with individual foam cushions and backs. They operate at speeds of up to 100km/h. As a result, commuter times have been reduced by up to 30 per cent compared with diesel-hauled trains.

The 264-unit fleet was built by Walkers-ASEA Pty Ltd at Maryborough, 250km north of Brisbane, at a cost of $210 million.

Free park and ride stations have been another factor in the boom in rail travel in Brisbane. There are more than 10,000 off-street car spaces at 84 railway stations on the Citytrain network, and work is proceeding on extensions and new facilities in an effort to accommodate all 11,000 vehicles that park at or near suburban railway stations daily.

In addition, co-ordinated rail-bus interchanges are now operating at 22 stations throughout the Brisbane Citytrain system.

The opening of the 4.4km extension of electrification to Eagle Farm has added the stations of Clayfield, Hendra, Ascot, Doomben and Eagle Farm to the electrified network.

Racegoers will benefit because Brisbane's two major race tracks, Eagle Farm and Doomben, are served by the line.

Travelling times between Doomben and the city will be reduced from 22 minutes for diesel services to 16 minutes and the frequency of trains improved.

The clip

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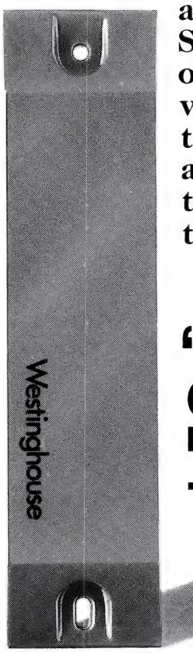

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PERTH SEES ITS ELECTRIC FUTURE

Transperth commits itself to spend $145m for an all-electric train system to be running by March 1991

The future of Perth's suburban electric rail network has been unveiled to an audience of public transport operators, civic leaders and engineers.

The new services will begin next year.

WA Transport Minister Gavan Troy unveiled a model of the new railcars following the announcement that a $66 million contract had been awarded to Walkers-ASEA Pty Ltd to build 21 new electric trains for the suburban railway.

Trial services between City and Cannington stations will begin in mid-1989, and all three suburban services are to be fully electrified by mid-1991.

"Electrification has now moved from the realms of promise to a reality," said Stuart Hicks, Chairman of Transperth.

The new air-conditioned railcars, which will be much more comfortable than diesel railcars, will eventually replace all the trains on the suburban network.

"The new trains, while modern, are conventional in design," Mr Hicks said. "We are not introducing some futuristic, out-of-this-world mode of transport but the latest comfortable and reliable electric trains.

"The selected railcar builder has worked closely with Transperth to come up with an interior which will provide a pleasing and relaxing atmosphere for all passengers."

The new railcars would be equipped with public address systems, bright lighting and facilities for the disabled.

Transport Minister Gavan Troy said $5.5 million in contracts for the signalling, communications and power systems would be awarded shortly. Tenders for the $12 million traction overhead equipment will be due in April.

"We are on target to begin trial electric rail services next year and Armadale, Midland and Fremantle lines offering all-electric services within approximately three years," Mr Troy said.

Transperth consultants found electrification to be less expensive than re-equipping with diesel-powered railcars and meant the rail network could be converted to a rapid transit system with faster and more frequent trains.

The first of the new railcars to be built by Walkers-ASEA Limited, with Clyde Industries, will be delivered in 15 months' time, allowing a City to Cannington service by mid-September next year and a service to Armadale in December 1989.

All the railcars will be delivered by the end of 1990, and the whole of Transperth train system will be electric by March 1991.

The $66 million railcar contract is a major part of the $145 million electrification project. Design work and tender processing for the rest of the project is continuing.

A $66 million contract winner: model of Transperth's new railcar shows its sleek lines.

The Walkers-ASEA joint venture was formed in Queensland 10 years ago. Division of responsibility for the Westrail car contract is:

- ASEA Brown Boveri Traction is responsible for technical and design co-ordination, together with the bogie and electrical system design.
- Walkers Limited is responsible for the manufacture of car bodies and mechanicals.
- Clyde Industries, as exclusive sub-contractors, will manufacture the electric traction motors to ASEA Brown Boveri requirements.

The stainless steel railcars will be longer and wider than the present ones and seat 76 people. Their design will cut noise levels in half and ensure low vibration. In fact, noise levels for the train when stationary and running will be comparable with the best in the world.

The cars will be fully air-conditioned with fire-retardant floor covering. Windows will be large and tinted to reduce glare and there will be two sets of double doors at each end for easy access.

Level floors will mean only one step for passengers to negotiate. It is planned to adjust platform levels so that the step between the car floor and the platform is no more than 140mm.

The new trains will be faster than the old ones, with top operating speeds of 90km/h, cutting travel times on all lines.

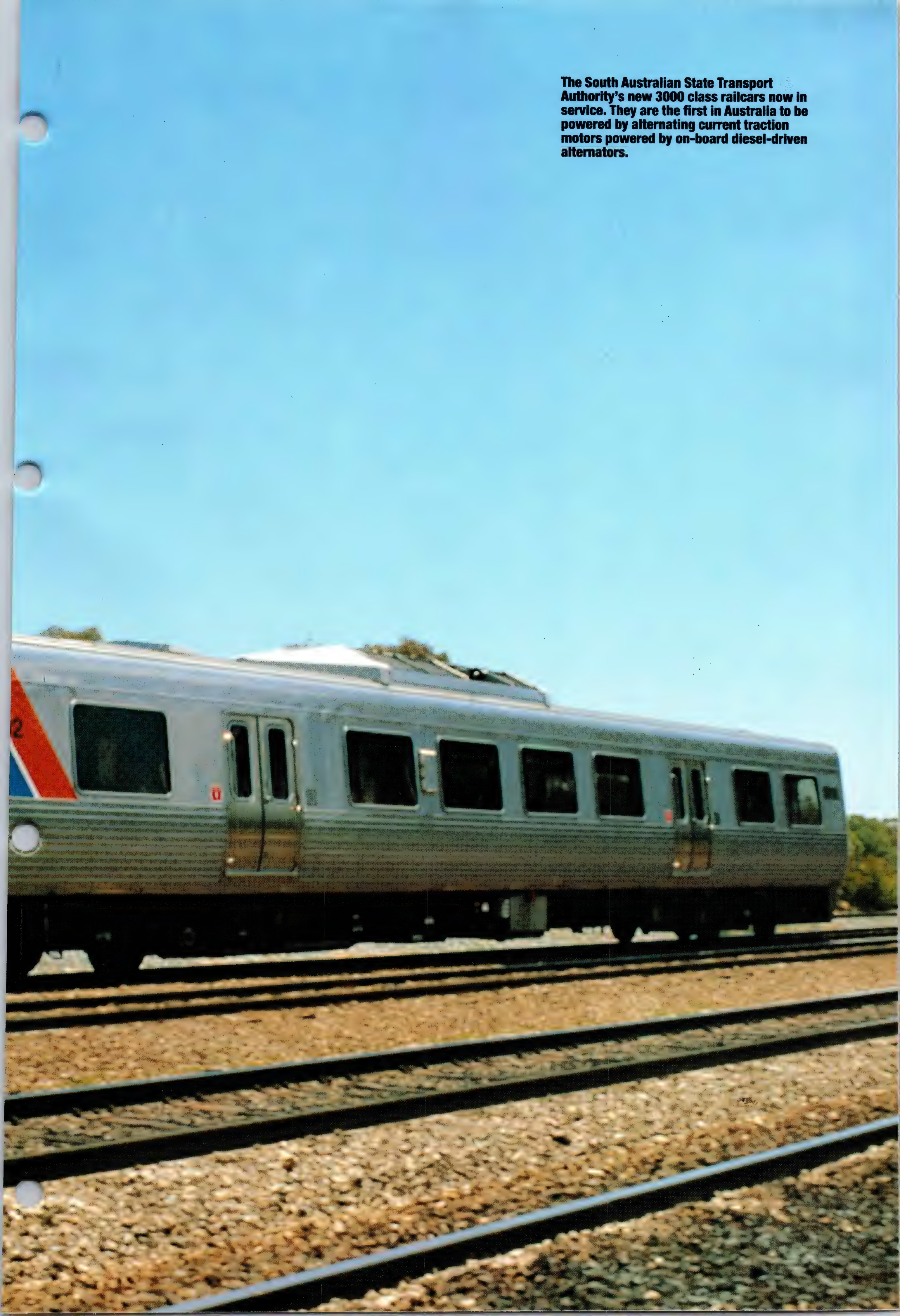
On the Armadale line, travel times will fall from 47 to 36 minutes in the off-peak and from 40 to 33 minutes in the peak. On the Midland line, off-peak times will be cut from 30 to 22 minutes and peak times from 24 to 19 minutes. On the Fremantle line, times will be reduced from 33 to 27 minutes.

ADELAIDE GETS ITS 3000 CLASS

ADELAIDE commuters on the 6.33 am to Brighton had their first chance to travel in a 3000 class railcar on Thursday 5 November 1987. Traffic planner KIM BIRD sets out the history of the new railcars. Technical information was supplied by mechanical design engineer Malcolm Jenkins of the State Transport Authority.

The South Australian STA's 2000 class cars were introduced in 1981 primarily to replace the thirteen 820 class wooden-bodied trailer cars withdrawn in 1977 and to provide extra capacity, particularly on the Gawler and Noarlunga lines.

This left in service 134 Redhen vehicles built between 1944 and 1946 (860 class trailer cars) and 1955-1971 (300 and 400 class railcars).



The South Australian State Transport Authority's new 3000 class railcars now in service. They are the first in Australia to be powered by alternating current traction motors powered by on-board diesel-driven alternators.

In September 1983, the South Australian Government authorised the STA to seek tenders for another 20 railcars and prices for up to 80. The purchase of additional cars was subject to the satisfactory operation of the first 20 cars over two years.

When tenders closed in June 1984, offers were received from the major rollingstock builders in Australia and Europe. Products offered included:

- Lightweight four-wheel rail vehicles.
- Locomotives and passenger cars.
- Articulated two-car railcars.
- Conventional railcars.

A short-list was drawn up of five railcar options:

1. Comeng: lightweight diesel-electric driven railcar.
2. Comeng: as above, but diesel hydraulic drive.
3. Clyde: as above (2).
4. Comeng: lightweight semi-permanently coupled railcars with diesel-electric drive.
5. Comeng: as above (4), but with diesel hydraulic drive.

All cars were of stainless steel.

The lightweight semi-permanently coupled railcars had two engines, the other railcars one. Seating capacities varied from 107 for a single railcar to 177 for the two-car articulated units.

Comeng claimed that (AC) diesel electric traction had several advantages over the more conventional diesel hydraulic traction:

- Higher efficiency, ranging from 3 per cent at full speed to 10 per cent at low speed.
- High quality electric braking that drastically reduces mechanical braking and wear and tear.
- No need for a separate diesel alternator for airconditioning.
- It is quieter.

The State Transport Authority in 1985 signed a contract with Comeng, South Australia, for 20 of the new diesel electric railcars, designated as the 3000/3100 class.

All 20 cars are powered, but eight (3000 class) have drivers' cabs at both ends, and 12 (3100 class) have one driver's cab. These are semi-permanently coupled to form six two-car units.

Although these will be the first SA railcars with electric transmission, other states have operated similar vehicles for many years. Ten petrol-electric railcars were introduced by the Victorian Railways in 1928. Converted to diesel-electric about 1952, some of these DERMS are still in service. In Western Australia, the " Governor" class railcars introduced in November 1937 were the first diesel-electric railcars in Australia. And the "Wildflower" railcar sets introduced by WAGR in June 1950 were also diesel-electric.

The STA's new vehicles are the first in Australia to be powered by alternating current traction motors powered by on-board diesel-driven alternators. Power comes from a Mercedes-Benz diesel engine directly coupled to a Reliance alternator, which produces the electric energy for traction and auxiliary power.

The engine-alternator unit runs at a constant speed of 1500rpm to produce an AC power supply.

STA rail motor driver Merv Yates takes the new 3000 railcar out of the depot.

Power for traction is then fed into a Stromberg rectifier/inverter unit with a variable voltage and variable frequency output to the two Stromberg bogie-mounted electric traction motors. Maximum speed for the new railcars is 100km/h. Varying the frequency and voltage produces positive torque for acceleration or negative to zero for a high portion of the braking effort.

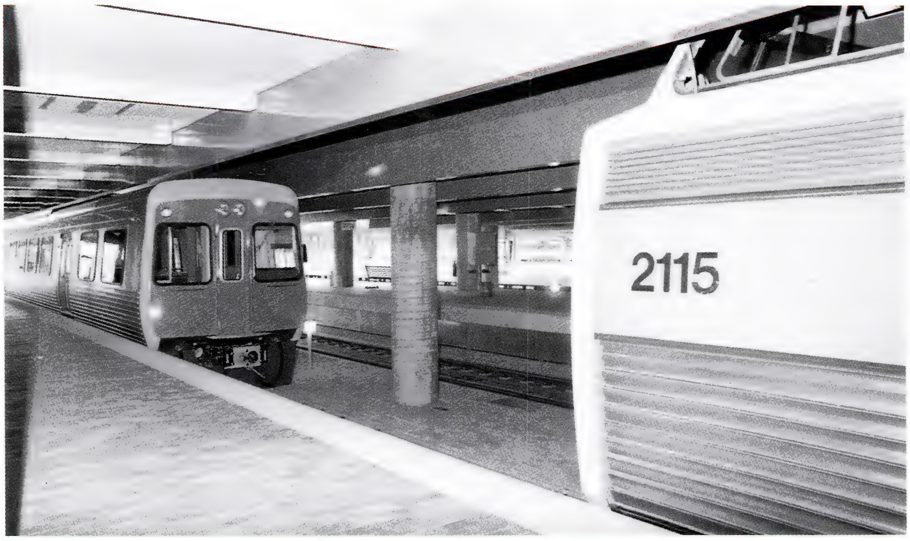
Wheel-mounted disc brakes on all axles provide the extra effort needed at higher track speeds and in the unlikely event of electric brake failure. They also work as a holding brake when the railcar stops. A separate spring-applied air-release parking brake is fitted to each bogie.

Railcars are joined using the Scharfenberg fully-automatic couplers. These units automatically couple railcars, at the same time joining trainlined airpipes and electrical cables. The whole process is remotely controlled from the driver's compartment. Up to six 3000 or 3100 class railcars can be joined to form a train, but as with the 2000 class, the number of cars is restricted by platform length. In an emergency, special adaptor couplings allow the cars to be pushed or pulled by rollingstock fitted with the older automatic couplings.

Bogies are of a fabricated, lightweight, bolsterless design, manufactured by Comeng under licence from Linke-Hoffmann-Busch (LHB) of Germany. The frames were built for Comeng by V/Line at their Bendigo Railway Workshops. On each railcar, one bogie is driven and the other is a trailer.

A driver's cab and guard's compartment are provided at both ends of the 3000 class and at one end of the 3100 class railcars. This lets the driver close off the leading end of the train from the public, but allows access between railcars operating in multiple units. The guard can also close off the end of the train to form the guard's compartment.

Wool-covered saloon seats in the 3000 and 3100 class railcars seat 105 and 113 passengers respectively, including two seats per guard's compartment that can be used by passengers when the areas are not in use in multiple-unit trains. The cars have power-closing side doors.



The first 3000 class railcar at Adelaide Station's platform one. In front is a 2000 series car.

On Thursday 14 May 1987, railcar 3001 was weighed on the Australian National Weighbridge at Dry Creek. The following Tuesday, it made its first test trip to Gawler and back. Further trips were made to Belair on Thursday 28 and Friday 29 May 1987. On Monday 15 June, car 3001 made its first run to Outer Harbor and the next day went to Noarlunga Centre, Gawler and Belair to check running times between stations.

Other trials between Salisbury and Islington ensured that specifications had been met. Seats in the passenger saloon were replaced by sandbags to simulate a fully-laden car.

After being used to train enough enginemen and guards, and with some adjustments to equipment, car 3001 went into service on Thursday 5 November 1987. Graham Brooks and his team in the Rail Schedules Department prepared a special diagram for the 3000 class car, replacing some single and two-car Redhens on the Belair, Noarlunga Centre, Grange, Outer Harbor and Gawler lines.

As the new cars become available, Redhens will be phased out. Members of the STA's Project Team are Malcolm Jenkins (Mechanical Design Engineer), Peter Rossi (Project Engineer) and Ashley Barnes (Senior Technical Officer), all of the Rollingstock Department. The project is overseen by Chief Mechanical Engineer Kong Ng and Rollingstock Engineer Dean Phillips.

The three STA employees based at the Comeng Dry Creek workshops are Tony McKeogh (Mechanical Inspector), Geoff Ward (Electrical Inspector) and Leon Lambert (Body Inspector).

Members of the STA staff try out the new 3000 class railcar's seats.

INTERCITY SLICKERS

NSW TO GET HIGH-TECH COUNTRY TRAINS

Passengers of State Rail will soon be travelling in new high-tech intercity trains.

An order for 14 new-design carriages has been approved by the NSW Government and another 36 will be added later.

Minister for Transport Terry Sheahan announced the order in February.

"The new state-of-the-art train will give NSW the most modern fleet of passenger trains in the world," Mr Sheahan said.

"The new high-tech intercity trains will soon join the glamour Tangara and XPT fleets in NSW."

The new intercity train would run from Sydney to Wollongong, the Blue Mountains and Lithgow, and Gosford and Newcastle.

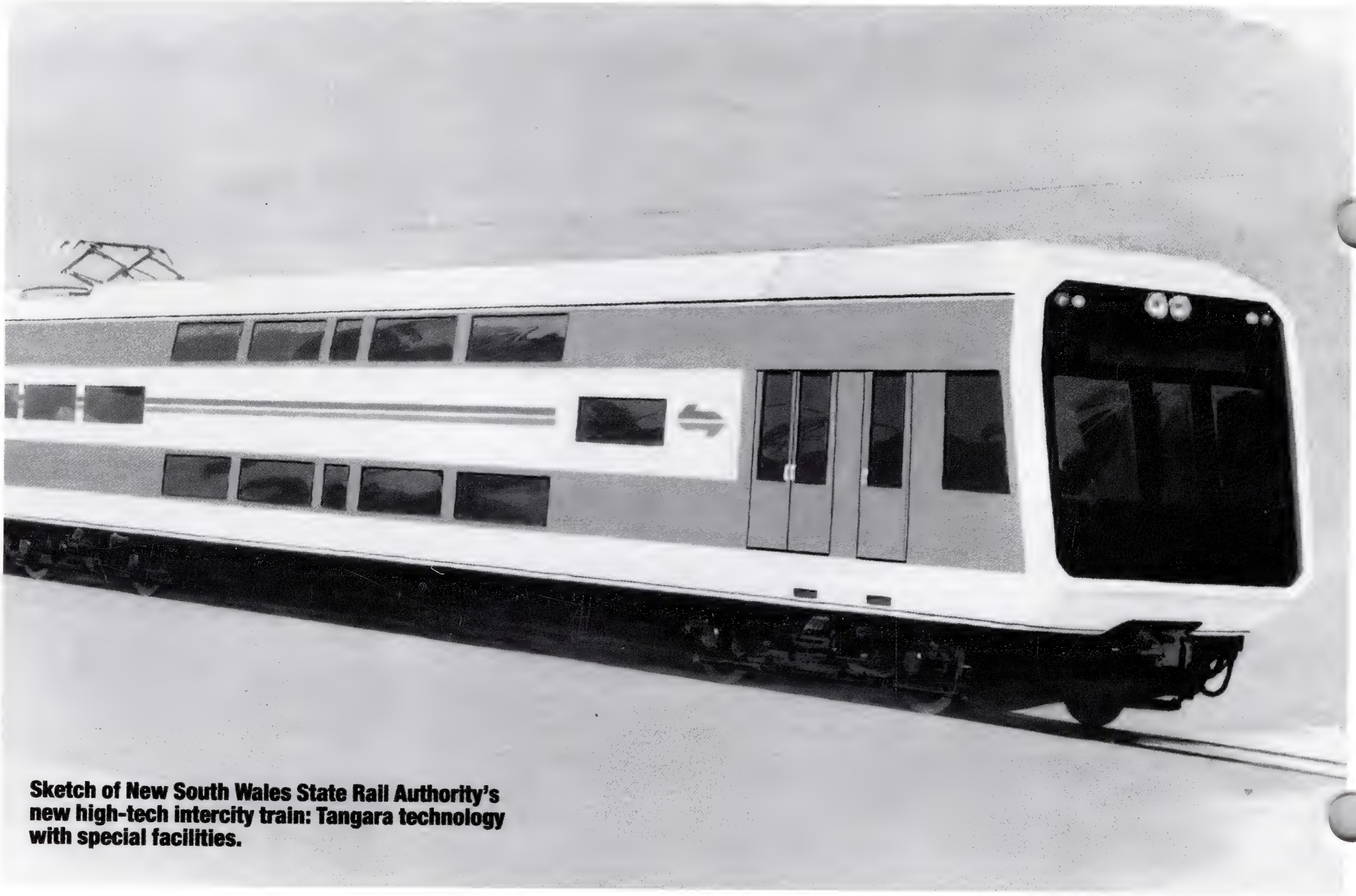
"Public transport is a social and community service, and we are confident that by providing the best available technology it can also attract large numbers of paying passengers to reduce dependence on Government subsidies," Mr Sheahan said.

"Last financial year more than 224 million passenger journeys were made on State Rail.

"Indications so far this year are that figures will climb a further 10 per cent."

Technology similar to that of the Tangara will be used in the 14 new intercity carriages. They will have flexible seating and special facilities for passengers on the longer intercity journeys.

Until the new trains are delivered, State Rail will continue the refurbishment of all country locomotive-hauled trains to provide more comforts for country passengers.



Sketch of New South Wales State Rail Authority's new high-tech intercity train: Tangara technology with special facilities.

TANGARA GETS GOING

ON Thursday 28 January the Tangara made its inaugural run on the Sydney System between Rockdale and Oatley, introducing Sydney rail commuters to a new standard of suburban train travel.

Tangara's styling reflects its advanced technology. Its features include fully ducted air-conditioning, spacious interiors with bigger entry vestibules, double-storey tinted windows, public address and passenger emergency alarm systems, and greater emphasis on passenger comfort.

It was fitting that Tangara's first public trial was run between Rockdale and Oatley because in 1926 the Central-Oatley line was the first electric passenger service in NSW.

NSW Premier Barrie Unsworth introduced the first four-car Tangara set to hundreds of rail travellers. He predicted that introduction of the Tangara would see a big increase in usage of public transport.

When Transport Minister Terry Sheahan introduced Tangara to the media on 15 January, he said the train had been a "bargain buy".

"It was the most economical decision we could have made," Mr Sheahan said.

"The $500 million price of the Tangara is actually less than the cost of providing additional stainless steel double-deck carriages similar to those already in service.

"Not only is the initial unit outlay less, but operational and maintenance costs will also be reduced with the new technologically-advanced Tangara.

"Combined with maximum reliability, improved performance and comfort and reduced operation and maintenance costs, the Tangara thoroughly deserves its 'Greatest Train in the World' tag."

The 450 carriages ordered will be delivered at the rate of one about every eight days.

Tangara will gradually replace the 60-year-old single-deck Red Rattlers on the Sydney system. The Rattlers have abnormally high maintenance costs, spare parts are a problem, they are uncomfortable, noisy, and are not air-conditioned.

Approved by the NSW Government in 1984, Tangara (from an Aboriginal word meaning "to go") will provide superior levels of comfort, speed and security to both short and long-distance commuter train travel throughout the Sydney metropolitan area.

The fully ducted air-conditioning provides up to 20 per cent more cooling capacity than existing double-decked trains, for year-round climate control. The ducting design ensures even distribution of air to all parts of the car. If overhead power supply is lost, air-conditioning units will continue to supply fresh air using battery-operated fans.

The seat shell is of glass-reinforced plastic. Removable cushions are designed to reduce vandalism and are made from fire-resistant materials. The seats offer excellent support and comfort with underseat space for bags and good access for cleaning.

Double-storey tinted windows contribute to the feeling of spaciousness in the cars. Saloon lighting is brighter than on present suburban services.

The doorways between cars have automatice bi-parting systems that are opened when the passenger uses the door handle. The doorway is 1400mm wide and allows passengers to move safely between cars through a fully-enclosed all-weather gangway.

Each vestibule has a passenger emergency alarm/communication system. In an emergency, a passenger can communicate directly with the guard, who will respond via the public address system. The train driver is also signalled that the alarm has tripped.

Car interiors are designed to feel spacious, with wider stairway areas and glass partitions. Larger vestibule areas and wider gangways between the cars enhance the open appearance.

Exterior doorways are quite different to those on existing suburban trains. They are of an external sliding "plug" type, providing a more spacious vestibule, cutting outside noise and increasing passenger safety. The doors are passenger-operated after the guard has electrically transferred control to the door. Doors will not open unless the speed of the train is less than 5km/h.

An audible signal is given to tell passengers that doors can be opened or are about to close. Should a passenger obstruct the doorway, the doors will stop and re-close after six seconds. Doorway openings are wider than on the present suburban trains to improve passenger entry and exit and reduce station standing times.

Seating in the Tangara is fixed, with 50 per cent facing forwards and 50 per cent facing backwards from the centres of the main saloons. This allows a higher seat back and more contoured cushions for passenger comfort.

The Tangara has both internal and external public address systems, and the guard can use either to make announcements to the train or to station platforms.

The Tangara: the NSW State Rail Authority looks to it to lure more train travellers.

Each vestibule has a guard's control panel, enabling the guard to carry out his duties without having to return to his compartment.

Each end saloon has seats for elderly or disabled passengers. The vestibule area behind each crew compartment is reserved for a wheelchair passenger. Cyclists may use it if not occupied by a wheelchair passenger. Wherever possible, provision is made for disabled passengers.

Tangara trains incorporate many advanced design features. These include:

- *Electronic traction control for smooth, jerk-free acceleration and braking and improved train reliability.*
- *Semi-fixed rigid couplings between cars for quieter, smoother operation.*
- *Full-width combined crew compartment, providing better vision and greater comfort.*
- *Computer-controlled fault-monitoring and recording systems to provide the driver with immediate fault diagnosis, permit rapid isolation of malfunctioning equipment, and minimise service delays.*
- *A static inverter auxiliary power supply system for air-conditioning, lighting, battery charging to reduce noise, vibration and to increase component reliability.*
- *New bogie design with "all rubber" suspension for smoother riding qualities and higher speeds with reduced noise levels and maintenance.*
- *Modular equipment to reduce running maintenance and servicing times.*
- *Powerful headlights and fog lights to reduce the effect of bad weather on operating speeds.*

TECHNICAL DATA

- *Maximum speed: 130km/h.*
- *Maximum acceleration (level track): 0.8m/sec/sec.*
- *Maximum service deceleration (level track): 0.9m/sec/sec.*
- *Emergency braking (dry, level track): 1.2m/sec/sec.*
- *Length of four-car train: 81.08m.*
- *Estimated empty car masses: motor car 50 tonnes, control trailer 42.25 tonnes.*
- *Estimated maximum mass on rail per axle: motor car 16.9 tonnes, control trailer car 14.6 tonnes.*
- *Basic four-car train configuration; CT - M - M - CT.*
- *Total train capacity: Four-car unit — 1040. Two four-car units coupled — 2080.*

V/LINE IS COMPUTER SYSTEMS PIONEER

NEW NETWORK TO PUT ALL FREIGHT SERVICES ONLINE

At a time of growing market demand and tremendous administrative and operational change, V/Line is making the most of the latest developments in computerisation.

Since 1983, V/Line has been steadily improving the productivity of its freight and passenger services.

A major part of the push for more efficiency is the introduction of new approaches and new financial, accounting, business and information systems, along with business strategy planning.

The thrust of V/Line's corporate strategy is towards achieving cost recovery targets through improvements in resource use and the expansion of market share by providing better services.

In 1986-87, operating expenses fell for the first time and there was a reduction in the deficit.

Before 1983, VicRail was handicapped by entrenched and antiquated systems, which were labour intensive and slow. There were separate empires and chains of command with no direct information flow. Decision-making powers and responsibility were often not properly allocated among management and staff.

Because of changes in organisation, work practices, responsibilities, services and directions in recent years, it is now easier to develop management information systems within V/Line.

The new systems approach has been introduced using a range of techniques and practices with few precedents elsewhere in Australia. Despite the size of the task, V/Line has developed new computer systems in areas including operational train running, general freight business, payroll/personnel and accounts payable.

The Freight Services, Transport Operations, Management Information Services and Finance divisions have worked together to detail requirements for the Freight Business System. The LCL (less than container load) part of the system will be in full use at all suburban and country Freightgates and in the Melbourne Freight Terminal by April this year.

The new system is designed to provide automatic pricing, timely freight business and revenue information for customers, management and staff, as well as to track consignments through the network. It builds up the information from the basic consignment transaction on-line without the need for laborious manual checking and cross checking of rate schedules, contracts, special rulings and without the need to do this with batch punching.

It also gives customers quick responses to rate and other inquiries, and will provide a link with the rolling stock control, container booking systems, accounts receivable and the general ledger.

V/Line Freight staff member checks on a consignment. V/Line's innovative computerised Freight Business System is designed to provide customers with immediate information on their consignments.

The full Freight Business System, covering all V/Line freight services, is due in service by the end of 1988.

At V/Line Freight, as in other departments, customers come first. It is therefore vital to provide them with a direct flow of information on their consignments. The freight business system also speeds up deliveries, minimises delays and provides for more competitive, customer-responsive services.

On the operations side, V/Line is developing a control system comprising three sub-systems: working timetables (detailing all daily train schedules), monitoring of train running, and rolling stock control.

Stage 1, the working timetable system, went into use in August 1987. Train monitoring is due for introduction in mid-1988, followed by rolling stock control in late 1988.

The main aim of the Operations Co-ordination System (OCS) is to enable V/Line to use its resources better and to give customers better service. It will provide up to the minute information for the planning and control of yard working, freight movement, and wagon, carriage and locomotive use.

These systems will help co-ordinate marketing and operations procedures, even before the container or consignment is moving through the Victorian or national freight networks.

This information is also a record for the customer and for volume and revenue statistics, train and wagon movement and maintenance details.

An inventory control system will be introduced in July this year, after which work will begin on the Integrated Accounting System (IAS). This will, among other things, replace the existing RAMAS (Responsibility and Management Accounting System) — the corporate reporting system giving details of year-to-date costs against budget and other revenue items.

The IAS will also build on improvements to period financial reports, which will in turn allow for more accurate assessments and decisions.

The IAS will insure that budgets are reconciled with business strategy plans and results reported in program budget format, a procedure that will involve the interaction of all divisions.

The IAS will rationalise staff employed in these areas as well as creating more uniform and flexible procedures (such as meeting demands for cash accounting and accrual accounts).

The MIS Division is co-ordinating an all-division task force working on the Information Systems Strategic Plan (ISSP) to determine V/Line's course for the next five years.

This project, conducted with the PA Management Consulting Group, will ensure that there is co-ordinated development of information and business systems across V/Line, a balanced, manageable and affordable program for systems development. It includes plans for staff training and the introduction of project management methods and control and monitoring techniques.

The demand for better systems means new technology, new software and new skills for operators.

The continuing reductions in V/Line's deficit through providing services more efficiently is a reflection of improved financial and operational business systems, along with a more productive freight and passenger business.

OUTBACK OPERA

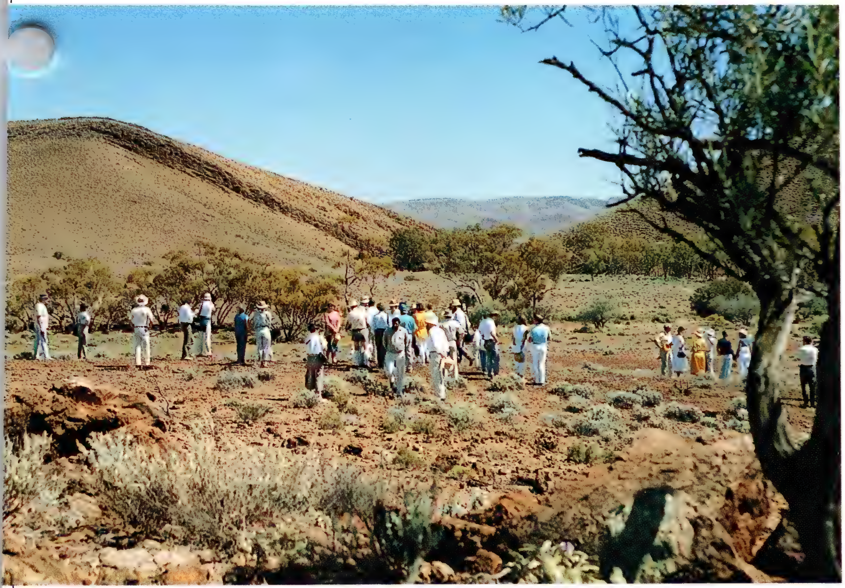
WORLDWIDE AUDIENCE FOR ULTIMATE BUSH CONCERT

Australian National and the Australian Bicentennial Authority are gearing up for one of South Australia's major Bicentenary events — an Opera in the Outback that could pose a major challenge in catering and accommodation.

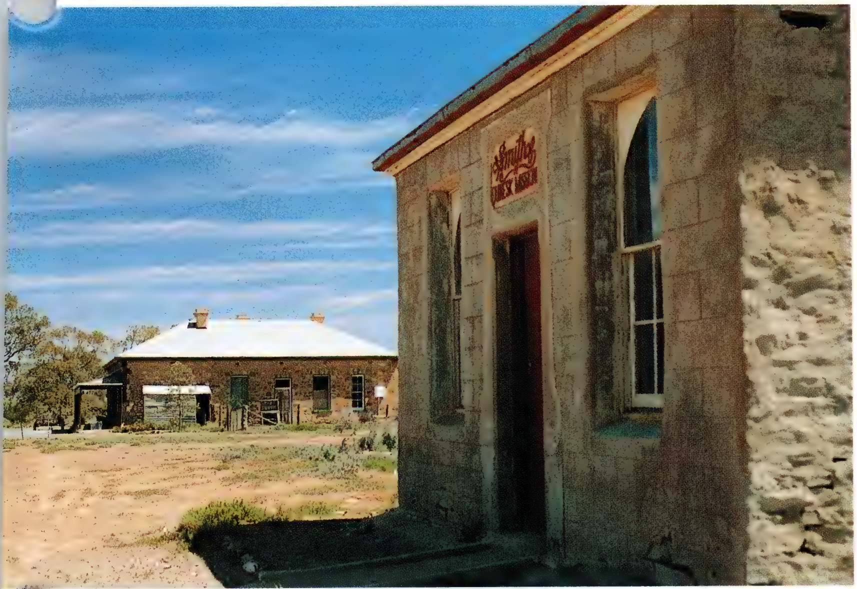
The event, on 3 September 1988, will see international opera singer Dame Kiri Te Kanawa and the South Australian Symphony Orchestra perform under the stars.

A natural amphitheatre near Beltana in the Flinders Ranges 600km north of Adelaide has been chosen for the event, in aid of the Royal Flying Doctor Service. Up to 5,000 people are expected to attend the performance, to be televised worldwide, an indication of the size of the organisers' coup in securing Dame Kiri.

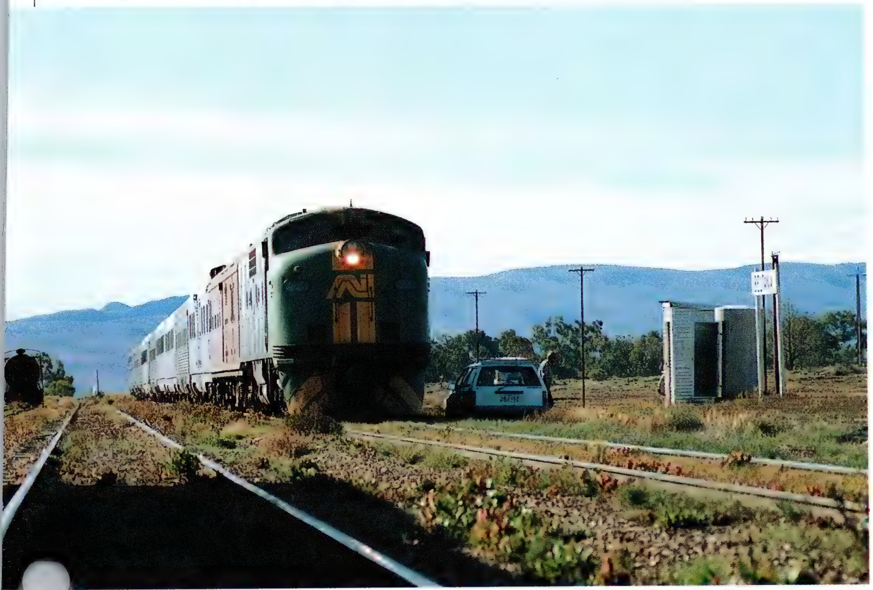
Streaking home at the Beltana bush races: one of the events planned for the Opera in the Outback weekend.



Natural amphitheatre near Beltana, 600km north of Adelaide, will be the scene of an opera spectacular for an international audience.



Almost-deserted Beltana is 50km from the nearest town and hundreds of kilometres from plentiful accommodation.



A transcontinental express is a rare sight at Beltana. Passenger trains have not been seen on the line since 1980.

Almost-deserted Beltana is about 50km from the nearest town, Leigh Creek, and hundreds of kilometres from plentiful accommodation. To overcome this, it is planned for special Australian National sleeping car trains to run from Adelaide, and possibly from Sydney, to carry patrons to within a few hundred metres of the performance.

The trains will be used for accommodation and some meals for the weekend event, which will coincide with the annual Beltana bush race meeting and include a giant bush barbecue, fireworks and a laser display.

Thousands of other music lovers from around Australia are expected to make their own way to Beltana, many camping in the rugged surrounding country. For them, camping and toilet facilities will have to be provided, as well as food at the bush barbecue. Everything — stage lighting, equipment, food, water — has to be transported to the site.

Although Beltana is derived from the Aboriginal for "running water", water is a scarce commodity to be brought in.

The Army will help with security and other aspects of the event, while the RAAF is expected to put on an aerial display.

AN, the Electricity Trust of SA, and private sponsors are backing the opera.

INSPECTION. To inspect the facilities and identify problems, organisers travelled by rail to Beltana on 2 - 3 October last year to watch the bush races.

The sight of a transcontinental-style express was a rare one for the normally coal-only railway. Locomotive-hauled passenger trains have not run on the line since the new Alice Springs line opened in 1980.

The organisers were shown the little church, the Smith of Dunesk Mission at Beltana, where the Reverend John Flynn — Flynn of the Inland — began his ministry. Flynn founded the Royal Flying Doctor Service, which will benefit from funds raised during the Beltana weekend.

The Beltana gymkhana and races, complete with bush barbecue, was an unpretentious Outback event. Opera lovers are in for a treat as city folk mingle with the enthusiastic locals.

On the train, the chairman of the board of Opera in the Outback, Mr Tom Morris, said: "The setting for the concert, in a natural amphitheatre in the ranges, is superb. It promises to be an outstanding event, one of the most significant events planned for South Australia's contribution to the Bicentennial Celebrations."

The project will cost about $500,000.

On a site as dramatic as can be found in the Flinders Ranges, the logistical problems are going to give considerable scope for initiative. The result should be a singular event.

Want to know more about Australian Railways?

The XPT (Express Passenger Train) just south of Goulburn, N.S.W.

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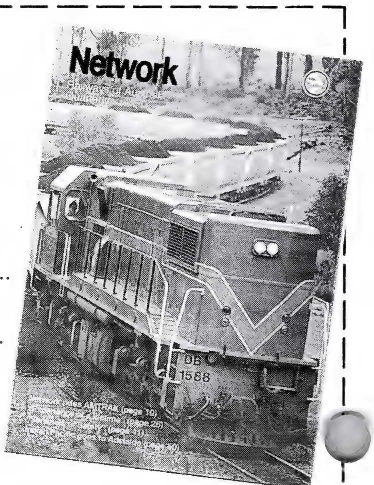

New South Wales State Rail Authority's Metropolitan Strategy Survey team of (from left) Geoff Jackson, Karen Hutchinson, Barry Garnham (front), Peter Siapos and Glenn Maker.

COMMUTERS TELL ALL

SR's DATA BASE MAPS THE FUTURE

State Rail now has one of the world's largest passenger business data bases — a result of its Metropolitan Strategy Survey (MSS) begun in November 1986.

And that information is already showing how "morning peak" services can be improved.

The MSS is the most extensive survey made by an Australian rail system. Its purpose is to learn how the Sydney system must adapt to handle more custom and changes in residential patterns. The information collected will allow State Rail to satisfy the changing needs of its customers.

The survey took six weeks. More than 56,000 questionnaires were completed by commuters. Over the six weeks, 250 State Rail employees volunteered to help by handing out the questionnaires and counting commuters joining and leaving every suburban train.

The survey has involved the joint working of McNair Anderson (a research company), the State Transport Study Group, GHD-Transmark Railway Services, and various branches of State Rail.

The data base holds information on who uses rail services (age, sex and income), when they travel, where they travel from and to, and why they travel.

These details will be essential in determining future services.

The "morning peak" report has been completed. It gives details of how services can be improved in the short and long term.

Reports covering the rest of weekday and weekend services will soon be finished.

The MSS is the foundation of a data base that will be used to determine rollingstock, infrastructure, and timetable requirements to satisfy customers' needs well into the 21st century.

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HORSEPOWER

PUBLIC TRANSPORT GEARS UP TO HANDLE EXPO 88's MILLIONS

The largest public transport exercise for any event in Australia will bring millions of visitors to World Expo 88 in Brisbane.

More than 1,750 trains, buses and ferries will service the Expo site each day from 30 April to 30 October. More than 1,400 taxis will also be on call in the Brisbane area.

Expo chairman Sir Llew Edwards, Transport Minister Ivan Gibbs, and Lord Mayor Sallyanne Atkinson launched Expo's "Go Easy To Expo" publicity campaign.

Mr Gibbs, the Lord Mayor, and council transport committee chairman Norman Rose arrived on the first ferry to berth at Expo's new $500,000 ferry terminal.

The ferry, the first of thousands that will travel to Expo this year, was met by Sir Llew.

The campaign will include press and radio advertising and letterbox drops throughout south-east Queensland.

Sir Llew said Expo 88 would be one of the best serviced Expo sites. A fast and efficient public transport system was essential for the event's success.

The "Go Easy To Expo" campaign would tell potential visitors that public transport, both on land and water, was the easiest way to travel to and from Expo, Sir Llew said.

Mr Gibbs said three years of work by the Expo 88 transport management committee had gone into giving Expo visitors the best public transport.

The committee was chaired by the Transport Department and included representatives from the Expo Authority, the Brisbane City Council, Queensland Railways and the Police Department.

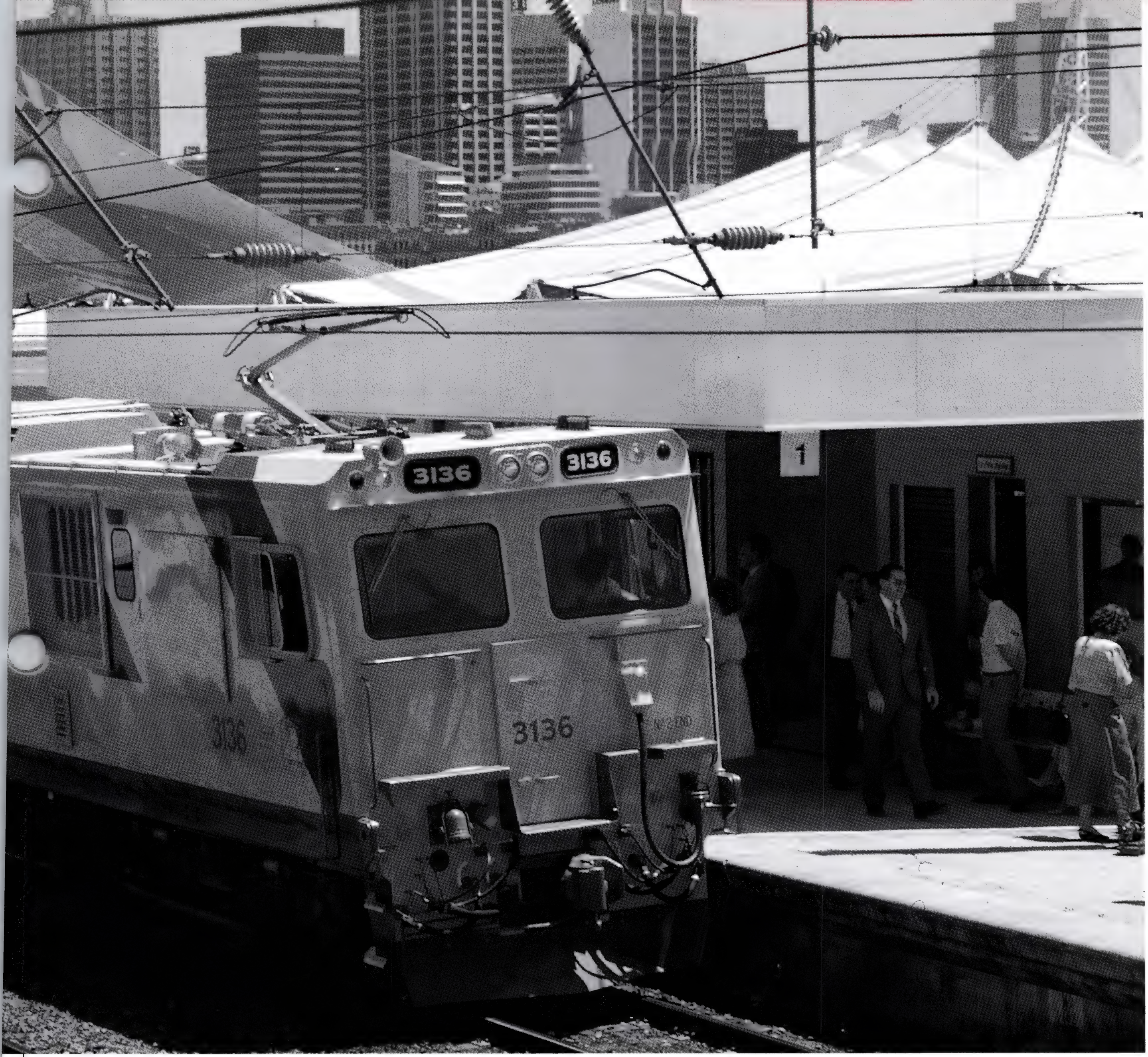
"With an estimated 5.5 million visitors using public transport, this will be by far the largest single transport exercise ever undertaken in Australia," Mr Gibbs said.

"We are confident that the transport system, including 179 daily electric rail services, has the capacity to handle these huge crowds."

LOCOMOTIVES SHOW THE COLOURS FOR BICENTENARY CELEBRATIONS

Queensland Railways is providing three locomotives painted in the bicentennial colours of green and gold as part of its contribution to the bicentenary.

The first, a Comeng electric locomotive, was presented in Brisbane at the Vulture Street Railway Station, which will service Expo 88 during this year's world fair. The 110-tonne locomotive is now in service on the coalfields in Central Queensland.



QUEENSLAND RAILWAYS SETS A NEW RECORD FOR HAULING COAL

READY FOR COAL HAUL
A Queensland Railways 2900kw 3100 Class electric coal train locomotive ready for service on the Goonyella coal mine system to the northern seaports.

Queensland Railways hauled a record 29.8 million tonnes of export coal in the six months up to December 1987. This compares with 27.4 million tonnes in this period in 1986, and confirms QR's coal haulage as the largest single commodity traffic task performed by an Australian railway system.

Queensland Railways expects to carry 58 million tonnes of coal for export in 1987-1988, well above the 55 million tonnes in 1986-1987.

The main ports for coal export were Hay Point (9.5 million tonnes) and Dalrymple Bay (7.9 million tonnes) south of Mackay, Gladstone (8.4 million) and Abbot Point (2.9 million tonnes).

In 1990-1991, QR expects to haul almost 65 million tonnes of export coal.

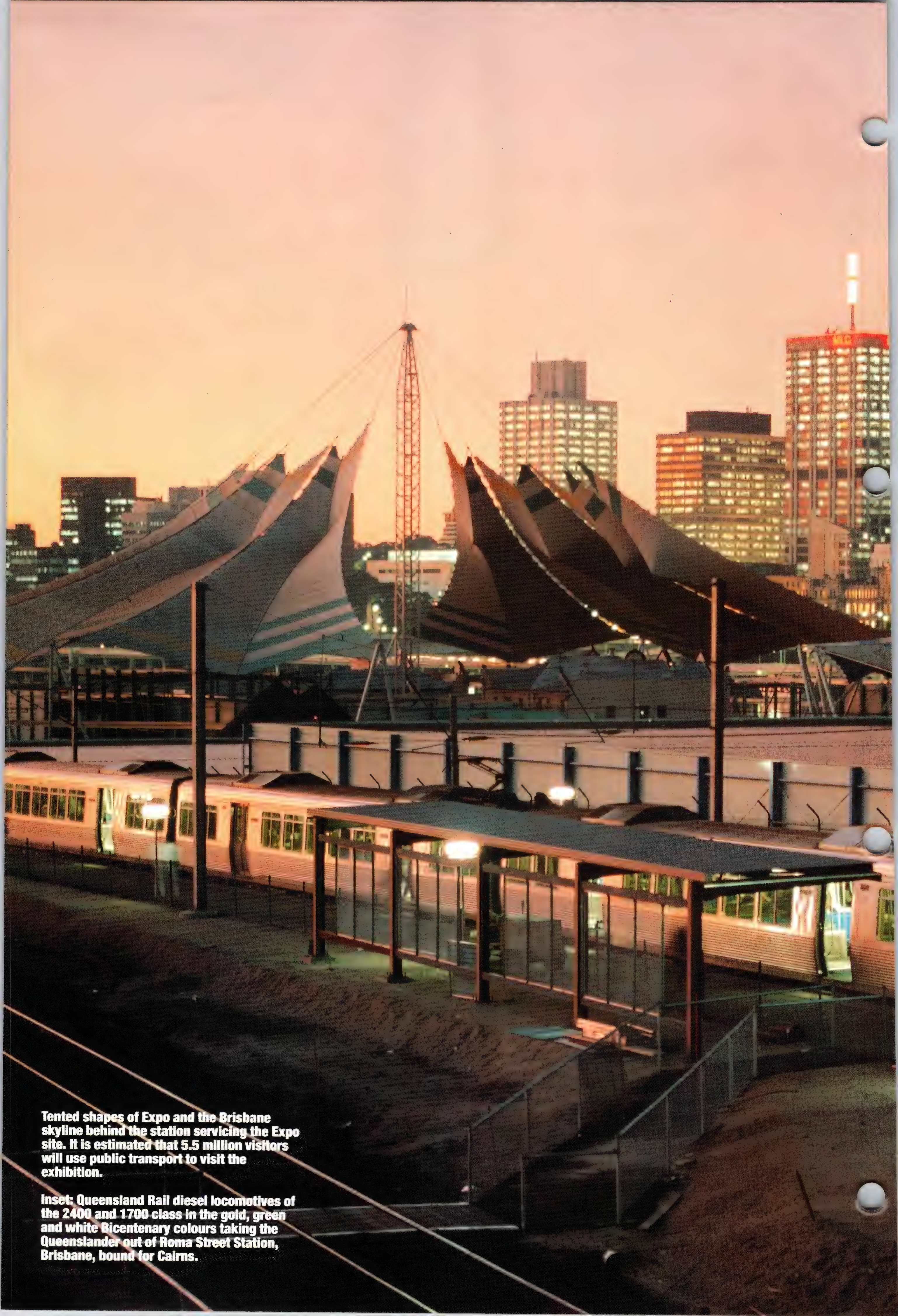
Regular electric-hauled coal trains began service in Central Queensland in May 1987.

Electric locomotives will be phased in until late 1989 when they will be hauling well over 1 million tonnes of coal a week.

Sets of up to five locomotives haul coal trains of up to 10,500 tonnes between the mines and ports in Central Queensland in one of the world's major heavy-haul rail operations.

Two Clyde diesel locos, 2401 and 1723, which entered service in 1977 and 1966, are the other locomotives sporting the bicentennial colours. They hauled Queensland Railways' passenger flagship, The Queenslander, on 31 January 1988 for their inaugural journey in the bicentennial livery.

The diesel locomotives will be in regular use in 1988 on The Queenslander, which travels weekly between Brisbane and Cairns in both directions, and will also be seen on the suburban system during Expo 88.


Tented shapes of Expo and the Brisbane skyline behind the station servicing the Expo site. It is estimated that 5.5 million visitors will use public transport to visit the exhibition.

Inset: Queensland Rail diesel locomotives of the 2400 and 1700 class in the gold, green and white Bicentenary colours taking the Queenslander out of Roma Street Station, Brisbane, bound for Cairns.

2401
1723

THE BATTLE TO SAVE THE VICTOR HARBOR RAILWAY

'The lesson is this: nostalgia and enthusiasm won't run a tourist railway. It also takes a lot of blood sweat and tears, as well as financial expertise, negotiating skill and technical competence.'

By Ian Hammond

The Victor Harbor railway is special to South Australians. Not only was part of it Australia's very first railway (albeit horse-drawn), it has everything a rail traveller could want: scenery, a long, hard climb through the Mount Lofty Ranges, tunnels, bridges, fast runs and a magnificent sprint along the coast to complete the 132km run.

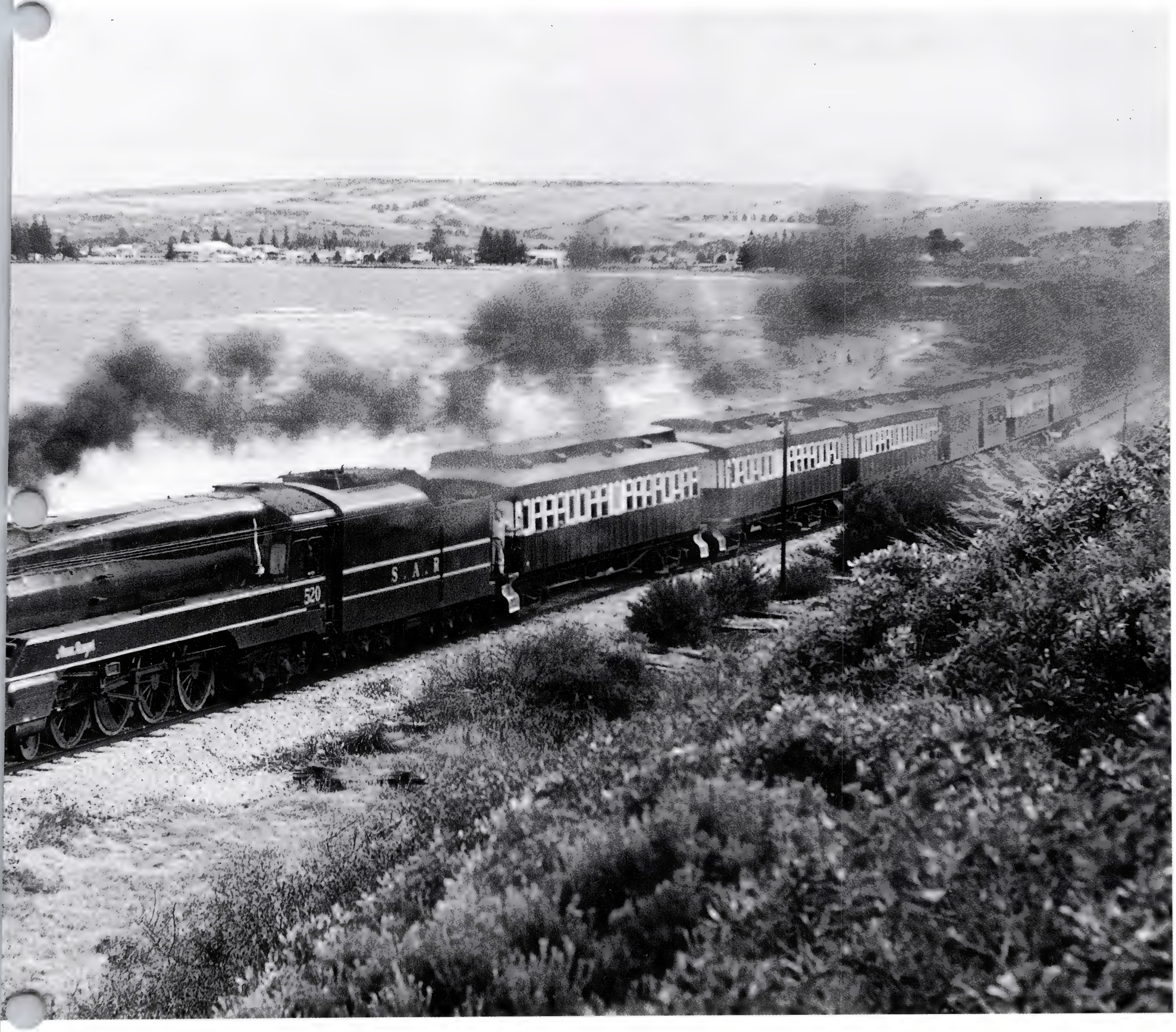
A mixture of mainline and branchline running, the route was travelled by the heaviest SA locomotives, yet it was also home ground for the smallest trains.

When the line closed past Strathalbyn in November 1984, rail enthusiasts vowed to carry on the fight for its survival. But neither the Australian Railway Historical Society nor anyone else could have foreseen the back-breaking track restoration or hard-talking negotiation that would be needed to get the line open again.

The establishment of the Victor Harbor Tourist Railway (VHTR) by ARHS-backed SteamRanger Tours has been an example of the awesome difficulties to be overcome in reopening a railway for tourists.

Much can be learned from the experience.

Opened between Goolwa and Port Elliott in May 1854 as a conduit for inland goods carried down the River Murray, the 12km line was extended to Victor Harbor in April 1864. Not for another 20 years were steam engines used — when the route from Adelaide via Strathalbyn and Goolwa was finished. It deviated from the main South Line (to Nairne and eventually Melbourne) at Mount Barker Junction.



The 520 locomotive pulls the Cockle Train out of Victor Harbor at the start of one of Australia's most varied runs. Pictures: Ian Hammond.

Passenger trains in service on the line ranged from a single Brill model 75 railcar to heavy trains hauled by mainline locomotives such as the 500 class 4-8-4s and the 900 class diesels. But freight traffic dwindled, as did the passenger numbers except on the occasional holiday weekend or ARHS special.

The inevitable end of regular passenger services came in April 1984, despite strenuous objections.

Then the hard work began. ARHS ran several steam trains in winter-spring 1984 to prove the viability of a tourist railway before AN stopped maintaining the line in November. The success of those trips was important in winning government support for a tourist railway: 9,000 passengers were carried on 12 trains, with 4,500 people turned away.

As SteamRanger director Dean Harvey said at the time: "Never before has there been such overwhelming opposition to the closure of a railway in SA. The community is totally opposed to the closure.

"We have had literally hundreds of letters written to us opposing it."

Despite the setback of an independent arbitrator's 1984 finding in favour of abandonment, a state government committee in 1985 supported the line's reopening for tourism.

APPROVED. The SA Government then approved the establishment of a tourist railway and, on 2 January 1986, resumed ownership from AN of the Strathalbyn-Victor Harbor section (the Mount Barker Junction-Strathalbyn section was then still used for AN freight services).

Under the VHTR proposal, the state government agreed to underwrite operating losses up to $100,000 a year to a maximum of $300,000. The plan was to run tourist trains about 60 times a year from Adelaide as The Southern Encounter, steam-hauled from April to November but diesel-hauled as far as Goolwa in summer. In addition, local trips known as The Cockle Train would run from Victor Harbor to Goolwa and back.

The poor state of the 50km of VHTR track was the first problem. A $1.25m Community Employment Program (CEP) grant and $775,000 of state government funds were allocated for the job, which began in March 1986.

The main tasks were the replacement of 26,000 sleepers in the mainline and the building of the Goolwa depot. The new depot has five sidings, a triangle for turning locomotives, a 42-metre-long double track shed, and an overhead tank for watering locomotives. (The tank stand came from Hilra on the Penfield line.)

While AN staff have volunteered to crew trains on the VHTR, many SteamRanger members have had to be trained in railway operation, undertaking tasks ranging from firing steam locomotives to being stationmaster.

AN provided ballast trains and tamped the line at an estimated cost of $70,000 as a contribution to the project.

SteamRanger contributed another $251,000 to cover weedicide treatment, communications and major overhauls to locomotives and carriages. Members also put in thousands of hours of volunteer work on projects along the 50km line.

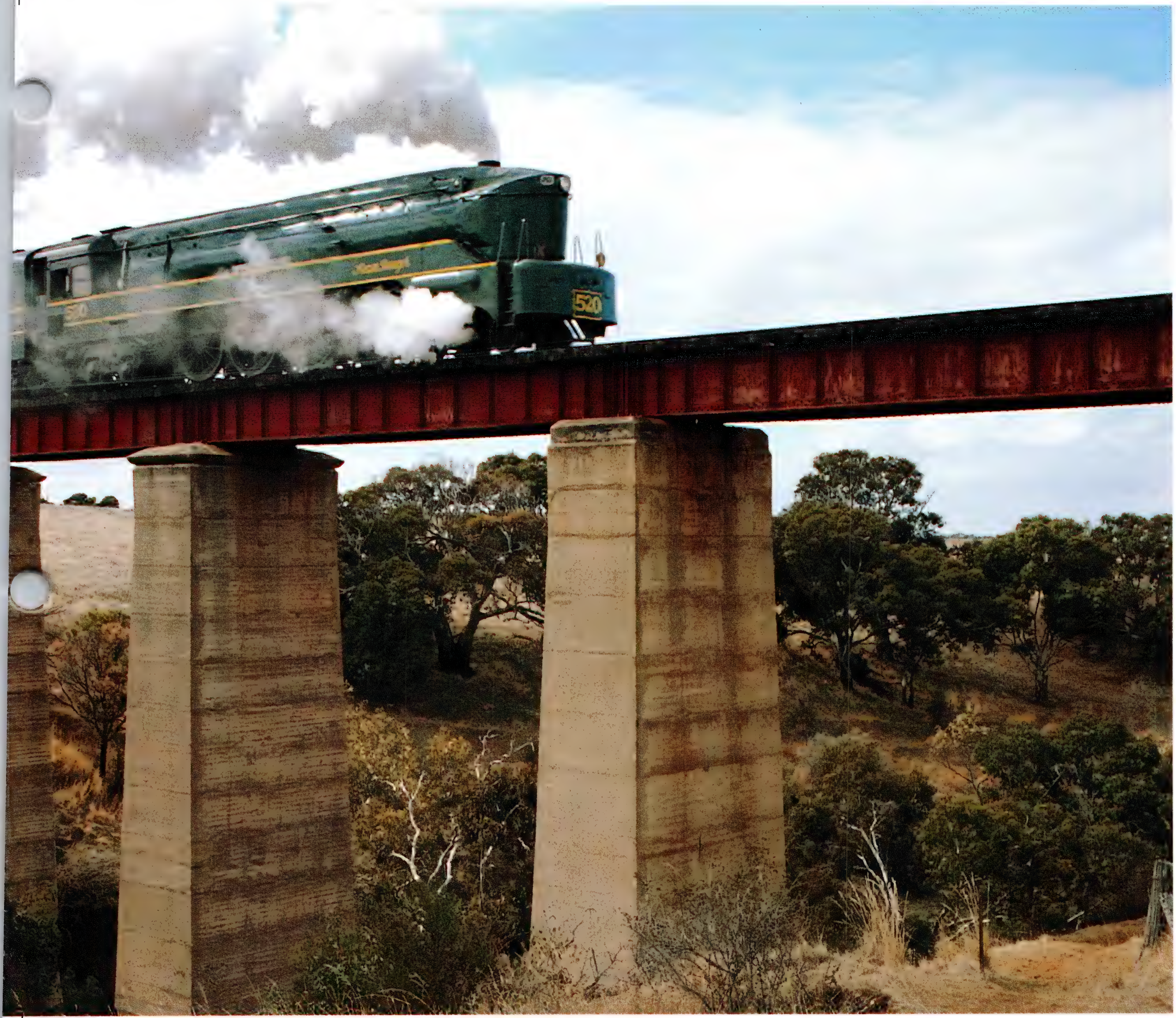
The project was co-ordinated by the State Transport Authority, which was also responsible for financial management. Up to 90 people were employed under the CEP scheme.

ROLLINGSTOCK. Running a regular tourist service over a difficult route demanded a reliable fleet of steam and diesel engines.

A major overhaul was required for Pacific 621 Duke of Edinburgh, out of service since 1978 when the boiler and valves needed a major overhaul. The 520 Sir Malcolm Barclay-Harvey, a 4-8-4 dating from 1943, was checked and repaired, as were the two little RX class 4-6-0s to run the Cockle Train in summer.

Two diesel electrics were bought by tender from AN, no. 909 being beautifully repainted in SAR livery and 907 held as spare.

AN provided ballast trains and tamped the line at an estimated cost of $70,000 as a contribution to the project.



The 520 puts on a show over Currency Creek Bridge.

Left and far left: Volunteer and CEP workers.

Many SteamRanger members have had to be trained in railway operation, undertaking tasks from firing steam locomotives to being stationmaster.

Despite the huge amount of voluntary work in restoring the engines at ARHS Dry Creek depot, the cost has been high. As an indication, about $4 million has been spent on loco and carriage maintenance since 1968, just after regular steam running finished in Adelaide. Restoring one carriage can cost $78,000, not allowing for the volunteer labour.

The carriages, steel cars dating from the 1930s and wooden end-loading Centenary cars (many now in their ninth decade), require continuing maintenance. Many have had major overhauls and been repainted. Some have been completely restored.

A total of 37 cars (including sleepers, brake vans) is maintained in service by SteamRanger, plus 30 freight vehicles.

While the engine, rollingstock and mainline track restoration was completed in time for the official opening in October 1986, the job was far from over.

The locomotive depot at Goolwa, to house steam engines for summer running, was not built before the CEP funds were said to have run out. Then insurance and train staff rostering problems on the AN section between Adelaide and Strathalbyn had to be resolved, delaying more trips until 28 December, 1986, when old 909 began working trains. Meanwhile SteamRanger had lost more than $61,000 and some big group bookings.

As the Goolwa depot was not ready for use, SteamRanger suffered another loss estimated at $155,000 because steam Cockle Trains could not run during the 1986/87 summer tourist season.

The first steam train for 1987 on Good Friday ran out of steam when 621 fractured a main steam pipe — the only failure in service to now.

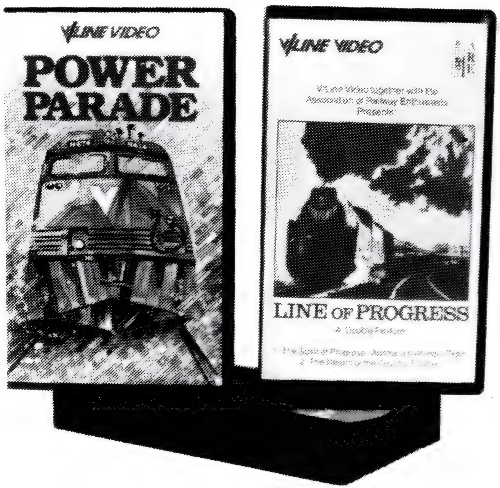
Adding to the woes was the imposition of a 20 km/h speed limit by AN on its Mount Barker Junction-Strathalbyn section and the banning of *all* trains (diesels included) from the line on days of general fire ban. The latter instruction was later rescinded by AN.

Dean Harvey reported that when steam workings began in 1987, passenger loadings picked up substantially, with many advance bookings. The appointment of a business manager, Daryl Havard, and the organisation of tour packages in conjunction with the trains have given a boost to the service. It was possible to visit a winery, take a cruise on the Murray in a brand new paddlesteamer or jog across to Granite Island on an 1880s style horse tram.

Settling down as a popular attraction, SteamRanger's Victor Harbor trains were as authentic as is possible, representing the

POWER PARADE & LINE OF PROGRESS

IDEAL GIFTS:



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POWER PARADE

Power Parade shows the development of steam and diesel-electric locomotives of the Victorian Railways and V/Line. Power Parade has some rare historical footage including Polly, the first locomotive built at Newport Workshops, in action as a steam crane.
Also included is action of a narrow gauge Garratt in the Otway Ranges, S Class steam locomotives, both in their original and streamlined forms, R752 hauling a wheat train and footage of X, A2, D4, C, Old R and E Class locomotives.
As an added bonus, there is a photograph of every class of locomotive to run in Victoria included.
But Power Parade is not just about nostalgia. Power Parade has present day action including the powerful sight of two C Class diesel-electric locomotives hauling more than 1,000 tonnes of freight up Ingliston Bank.
V/Line's newest locomotives, the N and G Classes, are featured in action as is the final run of the L Class mainline electric locomotives.
Power Parade is hosted by Gerald Dee, who spent many years on the footplate and is currently V/Line's Fuel Conservation Officer, and is narrated by well-known railway historian Bruce McLean.

LINE OF PROGRESS

A fascinating compilation of footage from the past and the present which highlights two historic events for passenger rolling stock in Victoria. Two separate and contrasting films - made nearly half a century apart - that take you from the days of Orient Express-style opulence and liveried conductors, through to the contemporary luxury of air-conditioned Country passenger trains.

THE SPIRIT OF PROGRESS - AUSTRALIA'S WONDER TRAIN.
This marvellous journey into the days of steam was created in 1937 to celebrate the construction of the original Spirit of Progress. The film has been restored from documentary material in the railway archives. Picture and sound enhancement have made it possible to present this film for the first time to a modern audience.
The Spirit of Progress - Australia's Wonder Train is a detailed account of the construction, unveiling and inaugural trip of a train that, in its day, was a hallmark of speed, quality and luxury.

THE RETURN OF THE COUNTRY TRAINER.
The second film in this package is a perfect counterpoint to the Spirit of Progress - Australia's Wonder Train. The stage is set in the early 1980's - almost fifty years later. The film focuses on the massive rolling stock upgrading task that was begun in 1982/83.
A new generation of artisans and designers undertake the construction. An impressive contrast to the crafts of the 1930's carriagebuilder, The Return of the Country Trainer gives a colourful insight into modern railway engineering techniques and the technical advances of the past decades.

Volunteer and CEP workers on the Victor Harbor line: the main tasks were the replacement of 26,000 sleepers and the building of the Goolwa depot.

1940-1960 era. But 1987 brought good and bad news.

MONEY. Investigations following the retrenchment of workers by the STA at Goolwa in October 1986 showed that, after all, they did have enough money from the original CEP allocation to complete the depot and mainline tracks. So, after a pause of some seven months, work began again in June and was completed by September.

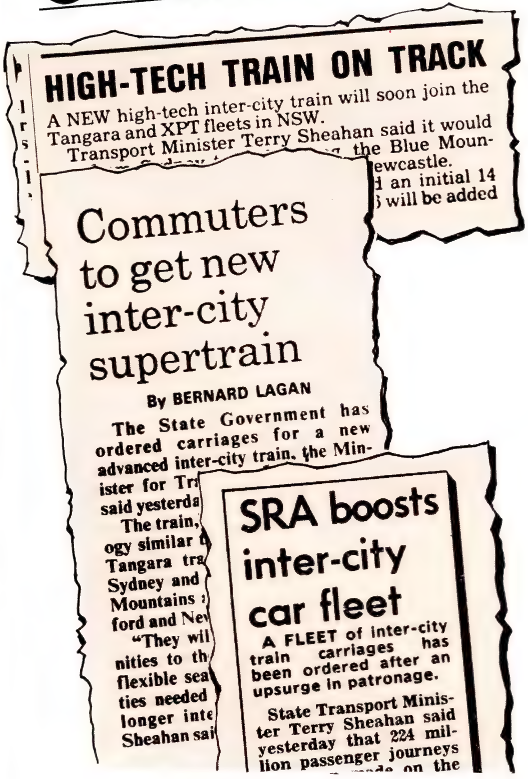
More problems hit the VHTR in November when AN announced the proposed closure of the Mount Barker Junction-Strathalbyn section of the line because of the loss of a grain contract (the only remaining traffic on the line) and poor track condition. This closure, of course, would cut the connection between Adelaide and Strathalbyn, preventing not only the working of passenger tourist trains, but also the transfer of rollingstock between Goolwa and Dry Creek for maintenance and repairs. SteamRanger has now mounted a campaign to raise $400,000 to restore the track. Sleepers are being sold at $25 each, and the day's use of a steam train (valued at $10,000) is being raffled.

What remains to be seen is whether SteamRanger's enthusiasm and all the money spent will produce public support, unfailing reliability of service and co-operation from the authorities.

The lesson is this: nostalgia and enthusiasm won't run a tourist railway. It also takes a lot of blood, sweat and tears, as well as financial expertise, negotiating skill and technical competence.

COMENG TO SUPPLY HI-TECH INTER-CITY SUPER-TRAIN!

GREAT NEWS FOR RAIL COMMUTERS!



HIGH-TECH TRAIN ON TRACK

A NEW high-tech inter-city train will soon join the
Tangara and XPT fleets in NSW.
Transport Minister Terry Sheahan said it would
the Blue Moun-
ewcastle.
d an initial 14
will be added

Commuters to get new inter-city supertrain

By BERNARD LAGAN

The State Government has
ordered carriages for a new
advanced inter-city train, the Min-
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said yesterda
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SRA boosts inter-city car fleet

A FLEET of inter-city
train carriages has
been ordered after an
upsurge in patronage.

State Transport Minis-
ter Terry Sheahan said
yesterday that 224 mil-
lion passenger journeys

In co-operation with SRA, Comeng have designed and developed a high-speed, high-Tech Inter-City Super-Train, scheduled to commence services late 1988 on the Gosford/Newcastle, Wollongong and Katoomba/Lithgow Routes.

This fantastic new train will provide SRA commuters with even higher standards of rail travel.

Placement of the initial order with Comeng further graphically demonstrates the Company's engineering expertise and manufacturing ability to design and build trains, locomotives, LRV's and rolling stock the equal of any in the World.

Initial order now placed. Commuter Services to commence late 1988.

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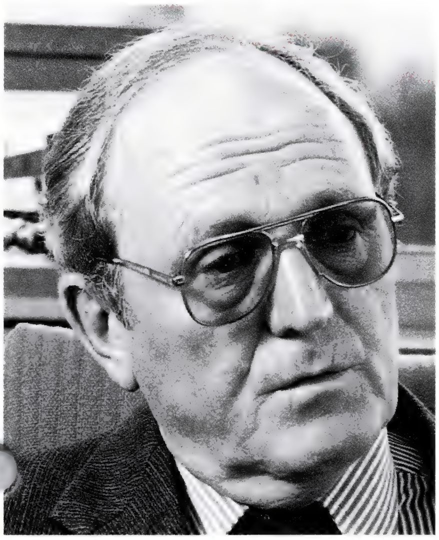

LOU MARKS SUMS UP

SEVEN years ago, Lou Marks made the somewhat surprising switch from road transport to rail, taking up the position of Chairman of the Australian National Railways Commission. Ian Hammond talked to him as he prepared to retire at the end of 1987.

When Lou Marks talks about railways, he talks mean, lean, productive and efficient. That's the way he saw road transport, and that is the attitude he has helped instil in the Australian National Railways Commission (AN).

AN is unquestionably far meaner, leaner and more efficient than when its first corporate plan was launched in 1978. An amalgam of three separate rail systems operating in three states and the Northern Territory, it has brought a new consistency to east-west transport, eliminating breaks of gauge by standardisation projects, consolidating management under one roof, and hacking out an awful lot of dead wood.

But one thing still worries Mr Marks. Much of AN's loading originates outside its realm of operation, and there are too many conflicting policies, politics and organisations controlling interstate rail freight and passenger traffic.

"Interstate rail networks should be managed by one organisation, whether AN or somebody else," he says. "At present, the interstate system is too cumbersome, shackled by a tyranny of organisational division rather than the gauge breaks of the past."

That, from a man who has guided AN through a dramatic transformation, warrants attention. And despite AN's rapid growth in interstate intermodal traffic, it is bound to furrow a few brows.

Fifty-nine-year-old Lou Marks is known in the industry as an astute, successful, vocal professional. He knows Australia's transport industry from driving trucks to driving a railway. That a private-industry champion has survived to point AN along the line to profitability says much for his character and perseverance and the respect he has earned from management, employees, unions and competitors.

He joined ANRC in 1981. He came with years of management experience in road transport, during which he was prominent in industry organisations. He had also held such important roles as member and subsequently chairman of the Australian Transport Industries Advisory Council.

Although some elements distrusted a road industry personality as chairman of ANRC, that mistrust soon dissolved, and he has been accepted on both sides of the transport industry.

He is leaving AN with a great deal of satisfaction, having seen it increase its freight productivity since 1978 by 43 per cent and carry 29 per cent more tonnage. It does this running 10 per cent fewer kilometres with 70 fewer locomotives and a third less staff.

Today AN carries nearly 13 million tonnes of freight, predominantly bulk and long-haul traffic, over a network of 7,315 kilometres. The annual loss has been reduced by 58 per cent from $156.3m to $68.7m (1987 figures), and is still dropping. This is a turnaround never before seen in Australian railways, yet AN is still the only government-owned system that is totally deregulated, or, put another way, the only system totally unprotected from competitors by any form of legislation.

As chairman of ANRC, Mr Marks recognises and gives credit to AN's management, employees and unions. "I've been blessed with one of the best teams one could have in government or private enterprise," he says. "So AN has been able to achieve the optimum it could."

"The road industry is very competitive, so it is mean and lean. I brought this into the railways, leading to better AN performance.

"But rail managers can't make the decisions as quickly as private enterprise. There are too many layers of control as well as the political influence.

"I thought more could be achieved in a hurry," he admits.

"However, I was very lucky to come on the scene at the time of a new realisation by governnments that they can't live with the financial burden of the railways. All are facing up to the same problem, that they can't go on ploughing money into ever-growing losses. They have to tighten their belts.

"The indisputable fact is that the Australian community is too small to carry the burden of inefficiency in any form, and there are far more pressing social demands on the public purse than the financing of needless rail losses."

Lou Marks gives full credit to the 19 unions involved for co-operating and helping get AN pointed in the right direction.

"In the main they have come along with change. They have extracted advantages for their members, and we believe that because AN has been willing to communicate with them, we have had changes made, whereas other railways haven't been nearly as successful. In the long run, the changes have been in the best interests of the employees.

"We have also been supported politically in doing things that were distasteful but necessary."

Looking back on AN's Corporate Plan 1, the commission should already have achieved profitability. But has AN failed in its plans?

Mr Marks believes that if all things were equal, AN would now be viable, but the federal government has added imposts such as the fuel levy for bicentennial road work, and customs duty on imported equipment.

"We've had those imposts and a couple of bad grain seasons too, as well as a leap in wages in 1980. But land freight rates don't increase.

"One suggested method for accelerating railway reform stems from a constant cry by sections of the trade union movement for greater capital investment in railways. There is no doubt that improved investment would improve productivity, but it would be a short-term solution unless it were combined with an all-out attack on the many other wasteful and service-destroying practices of the past," says Mr Marks.

He does not believe lack of investment is the serious problem it was in the past three decades or so, but is disappointed that government "grants" are not what they seem — they are interest-bearing loans.

"But maybe we are entering an era where more money can be made available for capital investment to improve productivity," he says.

"For example, planning is complete for a fibre optic communications network across the Nullabor to cost $19m. This will be more than recouped in efficiency.

"AN now looks at both the savings through investment, and the costs of not upgrading.

"There is a need for further investment in new, more efficient locomotives to improve productivity and save costs. And we would be a lot happier if the government awarded a grant to buy new locos in return for the fuel tax that we are paying to build roads!"

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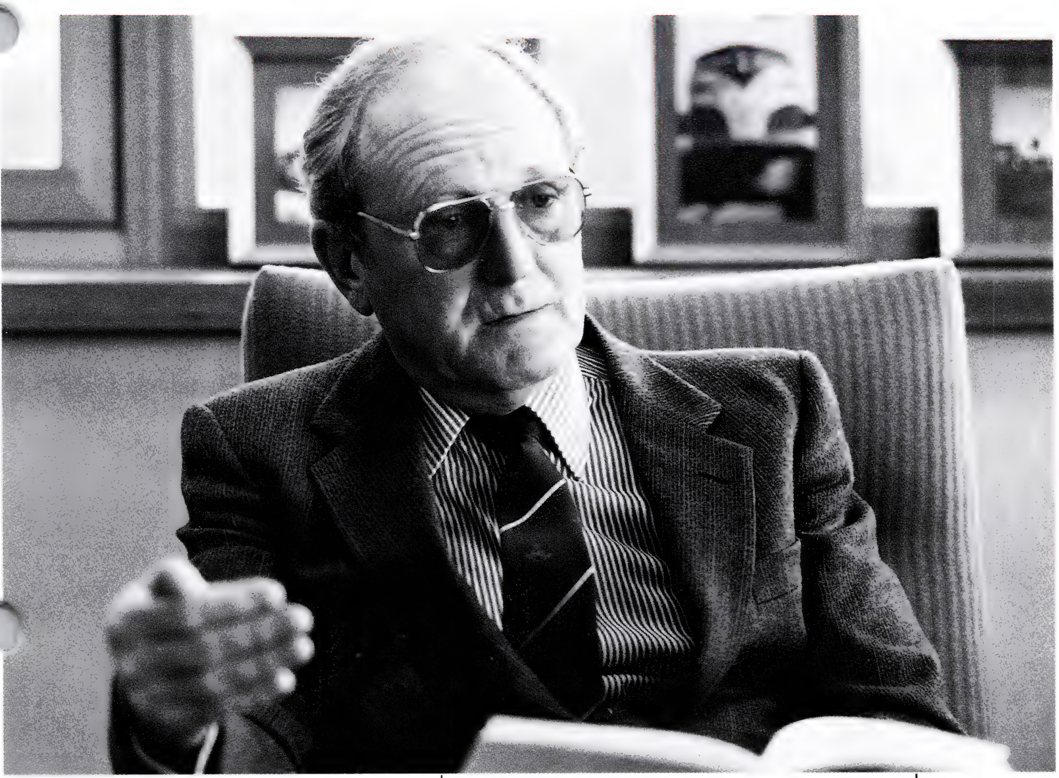


THE ROAD INDUSTRY IS LEAN AND MEAN. I BROUGHT THIS ATTITUDE TO THE RAILWAYS.

Lou Marks, newly retired Chairman, Australian National Railways Commission.

While pleased with advances thus far, Mr Marks stresses that it is critical for all the goals of AN's corporate plan to be vigorously pursued. AN must maintain its volume of traffic and grow.

One reason Mr Marks advocates one authority to control all interstate freight and passenger trains is that most freight carried by AN is "interstate" freight originating from, terminating in or passing through South Australia. Freight of this kind makes up about three-quarters of the freight task performed by AN.

"Nothing I have learned since 1978, and particularly, in the last seven years of close association with rail transport, has caused me to alter my firm belief that the interstate intersystem network, both passenger and freight, should be managed by one railway system or by an organisation formed for that purpose.

"To be competitive and successful, an interstate railway system needs to be free from the dead weight of multiple managements and in a position to respond quickly to its customers' needs.

"Hopefully, the National Freight Group was the first step in achieving a lean, mean and highly efficient interstate freight service.

"While we as a nation have almost eliminated the ludicrous historical problems associated with the physical 'change the gauge' between states, to some degree we are still restrained both in our interstate trades and as an industry in its own right by a mental 'change of gauge'.

"There is still fragmentation induced primarily through the level of emphasis each system gives to particular tasks, and to a lesser degree these days by state parochialism. But don't for a minute underestimate the inefficiencies generated by fragmentation — the cost of having a number of political and management styles involved."

Mr Marks does not advocate total ownership of all systems by one authority, only the operation and marketing of the interstate network.

He draws a clear distinction between intrastate freight, into which category most mineral, grain and other bulk traffics would fall, and interstate mainlines, which principally service the manufacturing, shipping and freight forwarding industries.

"We must recognise that each railway system's future is to a large degree shaped by the emphasis it must place on different tasks, by the level of commuter and general passenger services it must provide, by the volume of mineral and other bulk traffics it enjoys, and by the level of political intervention it suffers."

The first tentative step is being taken in discussing the blending of AN and Westrail operations.

"I would like to think that, although it will take a long while, AN and the other systems will link and the vision of one interstate network will come to pass. But it is so hard to predict because of the different political influences."

Standard accounting practices are another area of needed reform, he believes.

For many years railway managers have sought publicly, through their annual reports, to have their governments accept the identification, publication, and separate funding of their community service obligations.

"I would suggest not only that such a division be accepted at the political level, but that governments should also accept and encourage a standard commercial form of accounting and reporting, so that as an industry we might gain economic integrity."

(Reprinted by kind permission of Daily Commercial News.)

OBITUARY

PATRICK PAK-POY

Patrick Pak-Poy, chairman of the international consulting group Pak-Poy and Kneebone, died suddenly on 4 January at the age of 54.

Trained in civil engineering, traffic and transport engineering, planning, and business management, Pat's early professional years were spent in the South Australian Highways Department, where he held the dual positions of State Traffic Engineer and Executive Engineer for the Road Traffic Board of South Australia.

He founded P.G. Pak-Poy and Associates as a partnership in 1965 and was joined in partnership in 1967 by Doug Kneebone, who remained his closest colleague. Pat formed what was then an unusual multi-disciplinary practice spanning several professions and undertaking assignments of a type no other group could handle.

Part of Pat's aim was to apply a combination of experienced insight and a wide range of specialised knowledge to identifying and solving complex problems. His clients came from both government agencies and the private sector and included major railway and light rail assignments. His efforts on their behalf have been a model for the collective approach to consultancy in Australia.

Patrick Pak-Poy was born in Darwin on 19 January 1933. He moved to Adelaide in 1942 when Darwin was evacuated, and went to school at Rostrevor College, where he was an all-round sportsman and scholar, captaining the first eleven and the first eighteen, and becoming Dux of the school three years running.

He completed his undergraduate education in engineering at Adelaide University, and later gained a M.Eng.Sc. from the University of NSW.

Pat was a keen Rules footballer and played for Adelaide University in amateur competition. He played A grade squash and represented the state, won an Adelaide University blue for football and a half blue for squash, and was an excellent tennis player and a scratch golfer. A few years ago, he discovered downhill skiing and became very good at it.

From his university years in Adelaide and Sydney, Pat had a deep interest in planning, particularly in the foundations of social organisation and economic distribution, areas largely ignored by the professions at the time. He regarded planning as a means towards understanding and ordering, rather than as providing mechanisms for management and control. His search for order guided the professional challenges he sought, whether through consultancy, committees, consultation with government policy groups or in association with business. Pat Pak-Poy had an early fascination with the modelling of urban processes, and his pioneering work in the study of land use and transport interaction and in accessibility is still influential. Much of that work has been applied by his firm in regional planning, urban expansion and the planning of new towns in Australia, South-east Asian countries, and later in Africa and South America.

Pat was attracted to organisations that seek to advance understanding — the universities, specialised research institutions such as Stanford and the Hudson Institute, and the Australian Institute of Urban Studies, of which he was national chairman for some years and a longstanding committee member.

A frequent and respected advisor to federal and state governments, Pat was a determined promoter of Australia's need to be international in its perspective on trade and economic development. He was a member of the Federal Trade Development Council and the chairman of the Trade in Services Group, which has been examining ways to improve Australia's export earnings from the sale of services.

Patrick Pak-Poy was the kind of Australian we cannot afford to los so early. He will be sadly missed in the Australian railway community.

ANATOMY OF A HUGE PROJECT

ELECTRIC SYDNEY

Electrification of Sydney and Suburban Railways — The Genesis of the Sydney Electric Railway System

Australian Railway Historical Society (NSW), $25.95. Available from ARHS, Box E129, St James, NSW 2000.

The somewhat wordy title of this book gives a clue to its authorship. It is not a history but a reprinting of six technical and management papers presented to the Institution of Engineers in the second half of 1926.

At the time, the Sydney electrification project was just beginning to produce results, with the first electric train having run just months earlier. (The City Railway and Harbour Bridge was still some years from completion.) The authors, James Fraser, Chief Commissioner, Robert Ranken, Chief Engineer for Existing Lines, Cyril Byles, Signal Engineer, Ernest Edward Lucy, Chief Mechanical Engineer, Harold Myers, Chief Electrical Engineer, and J. J. C. Bradfield, Chief Engineer Metro Railway Construction, were responsible for the major parts of this huge project.

The six papers take up almost 370 pages and contain a wealth of detail on the conception of the Sydney electric system, much of which is still clearly recognisable some 60 years later. Perhaps the most interesting paper is that by James Fraser. It presents an overview of the project in its historical context and directly and indirectly gives some interesting pointers to the attitudes and events of the time.

Fraser describes the extraordinary rapid growth of the Sydney suburban passenger business — from trivial numbers in 1888, just 100 years ago, to 111 million in 1925. The resources for the task in 1925 (the last all steam year) had grown by some 430 per cent since 1893 to 212 locomotives and 983 carriages. (There was still no city railway and rail passengers for the central city had to transfer to tram or ferry to complete their journey.) It is little wonder that a sense of optimism pervades these papers.

Two small but significant things catch the eye in Chief Commissioner Fraser's paper. The first is his reference to the "suburban passenger *business*", a remarkably advanced view for the time, particularly since in Australia the idea of the railway as a business rather than a service has really only taken root in the last few years.

The second is Fraser's allusion to the original intention to provide only for road traffic on the Harbour Bridge. It is often forgotten that road has been a viable alternative to rail for more than half a century and has been well organised to argue its case for most of that time. As it turned out, the bridge got its railway — and tramway for that matter — but two-thirds of the cost of the bridge was debited to Railway Capital, a rather unequal treatment.

Interestingly, Fraser makes no reference to the similar city electrification project in Melbourne in 1919-1924, despite its obvious value as a prototype installation.

This book is not a quick read but it rewards with a wealth of detail, including illustrations and diagrams. Rail historians should find a place for it on their bookshelves, while anyone interested in the history of landmark projects will find it a treasure.

The authors' rather Edwardian expression — railway people have rarely been at the forefront of stylistic advancement — helps to keep the period of the papers in mind.

Bicentennial fireworks on Sydney Harbour Bridge: the plan was for road traffic only.

GREAT ARMCHAIR RAIL TRIPS

THE TRAIN TAPES

Tracks and Trains of Australia
$39.99.

Steam Trains of Australia
$49.99
ABC Shops

Over the years, ABC television has often featured railways and some of these tapes have now been combined in two videotapes, each running for 90 minutes.

The first, produced in 1985, is titled "Steam Trains of Australia". Presented by Jim Downes, it features extracts from "Weekend Magazine" and "Countrywide".

The topics are varied but the treatment concentrates on people — people talking about trains, people reminiscing about their experiences on them, and people labouring to bring some of them back to life.

The video opens with the successful Pichi Richi railway in South Australia (and prompts the question: why do so many photographers choose the dark side of the train for their pictures?) Tasmania's Abt rack railway, which ran from Queenstown to Regatta Point, is of great historical interest, although the background soundtrack is out of place — an error of judgement that occurs all too frequently where on-camera sound is not available. (A New South Wales Railways 38 Class Pacific in the wilds of Tasmania's West Coast?)

The recreation of the "Honeymoon Express", the old "Caves Express" of New South Wales, by an enthusiast group in 1973 produces some lengthy reminiscences.

The main feature on the tape "The Rag Tag Railway", is from "Countrywide", and tells the story of the branch from Glenreagh to Dorrigo on the NSW North Coast and the efforts to restore the line as a tourist railway. The monumental size of the task is well demonstrated, as is the most attractive scenery along the line.

The second, and more recent tape, "Tracks and Trains of Australia", concentrates less on talking heads and tells more stories. Again, the films are from the ABC archives.

The introduction uses an evocative film of Victoria's Puffing Billy, and then switches to Sydney's magnificent terminal station. A segment on the Don River Railway in Tasmania is followed by an attractive piece on Queensland's "Gulflander", the subject of a feature in a recent Network.

There are two period pieces from New South Wales: the story of the station garden at Telegraph Point on the North Coast line, and a 1975 story of a "call boy" in Junee. The second provides an interesting insight into an occupation all but gone.

A sequence on the Cairns Range Railway to Kuranda contains some excellent photography and enough historical detail, but again the soundtrack jars.

Although the cover of the tape refers to the Mallee line in Victoria between Piangil and Kooloonong as being in Gippsland, the story of the postal motor that travelled along it is well done.

There is also interesting footage of the last trip of the old narrow-gauge Ghan, and of the final run of the Southern Aurora express, with historic photographs of the Spirit of Progress.

The final sequence was made in 1974 on board the Indian-Pacific — "one of the few epic train journeys left in the world". Would that it were still "making a small profit" as the tape suggests. Fourteen years after this film was made, the Tea Board of India is still providing samples, from time to time, on Australia's major trains.

The picture and sound quality on both tapes is excellent. Full marks to the ABC for providing the public with some of its most interesting historical footage. But we missed any form of listing of the topics covered on both the cover and the video tape.

The earlier tape has sold well, and the second "Tracks and Trains of Australia" deserves to do even better.

PROMISING LUBRICATION SYSTEM ON ROA TRIAL

This decade has seen railways throughout the world pay much greater attention to improving the efficiency of energy usage because of the higher cost of diesel fuel.

One technique, wheel/rail lubrication, which has the potential to save up to 10 per cent of energy, is now being evaluated in an ROA co-ordinated Technology Development and Application Project.

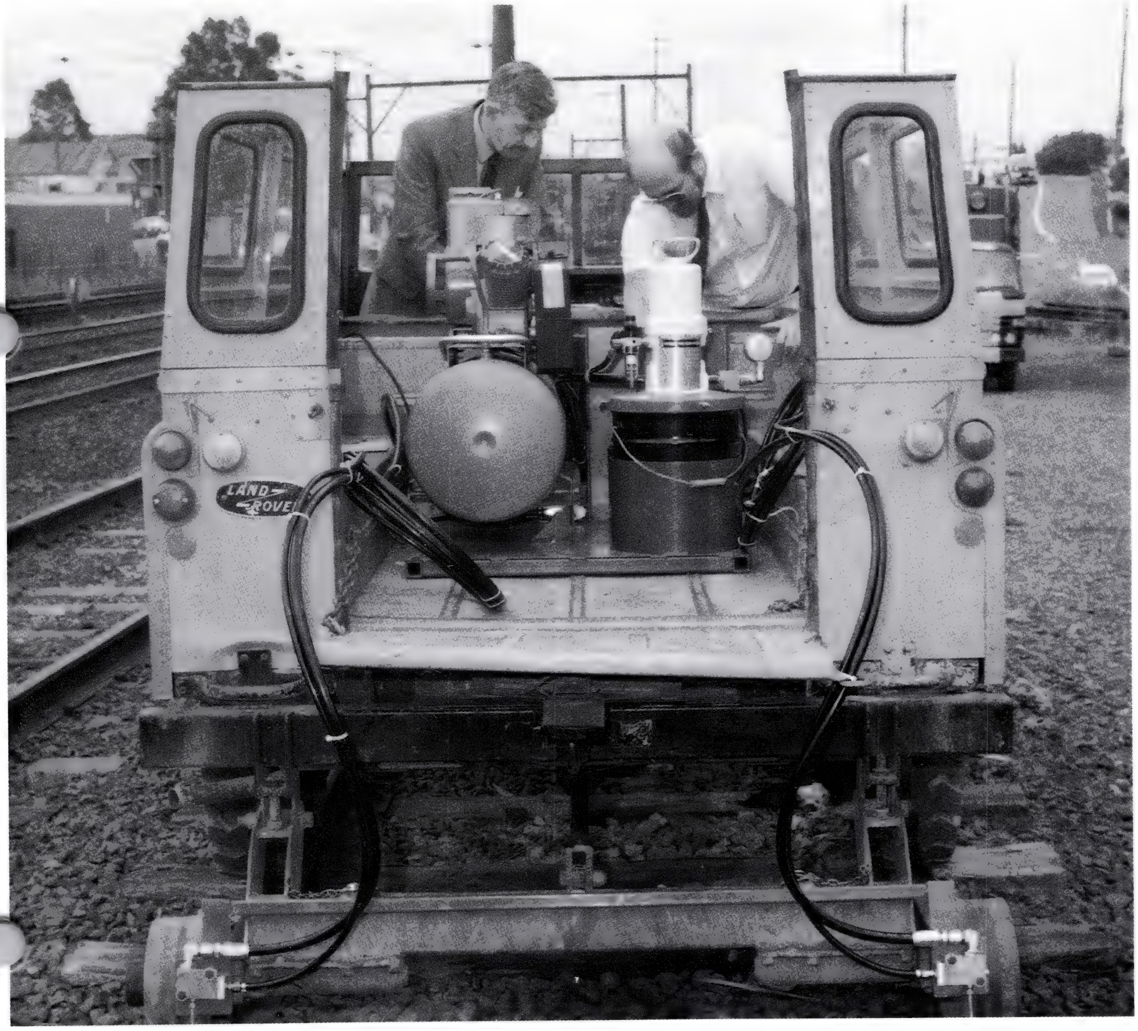
Lubrication reduces energy usage by decreasing the friction between the wheel flange and the side of the rail. Traditionally trackside lubricators have been placed at the beginning of sharp curves, primarily to reduce rail side wear.

In these systems, the grease is transferred along the length of the track by the passing wheel flanges.

But mobile systems can provide more effective lubrication. A traditional method has been to mount wheel flange lubricators on locomotives, principally to reduce wheel wear. Because the greasing requirement for reducing energy usage differs from that needed to reduce wear, improved locomotive-mounted lubricators have been developed in the United States. These units, which use sophisticated electronics, will shortly be installed for trials on State Rail Authority and Australian National locomotives.

An alternative method of mobile lubrication, also developed in the US, is the hi-rail mounted lubricator. Here the grease is applied directly to the side of the rail through a nozzle attached to the hi-rail equipment.

The first unit of this type has now been fitted on a State Rail Authority hi-rail vehicle.



John Broadley (left) and Greg Johnstone of the State Rail Authority of NSW test the new rail lubrication system. The control unit is operated from the dashboard of the vehicle.

TWO NEW RAIL TRACK MONITORING SYSTEMS

The complicated task of monitoring the shape and undulations of railway track is being done in a new way by an optical measurement system called Railscan, developed by Electrologic and installed in a New South Wales State Rail Authority railway car.

Railscan measures track wear as well as track geometry. It has made the New South Wales SRA the first railway in the world to record the two measurements at once.

Continuous measurement of track geometry is more usually done by instruments attached to wheelsets and measuring the position of the track relative to the car. This measurement is inaccurate at high speeds, when the wheelsets cannot perfectly follow the track. Railscan uses special cameras and a sheet of light to follow track undulations exactly.

Similar systems have been tried before, in Australia and overseas, most recording new information once a minute. Electrologic has produced a commercial unit that operates continuously, updating 50 times a second to allow recording speeds of up to 160 km/h. This compares with 60 to 80 km/h for mechanical methods.

As well as recording track undulations, Railscan provides an image of the rail shape, a transverse view from either side of the car. Both rail shapes are shown on one monitor.

In spite of substantial help from the SRA, the technical problems of producing the complex system were such that the project took seven years to complete.

Details about Railscan are available from Electrologic Pty Ltd, 24/33 College Street, Gladesville, NSW 2111, telephone (02) 816 1515 or 816 1374.

A Perth company, Acet Ltd, is to supply Westrail with one of Australia's most advanced rail track analysis vehicles.

The $900,000 vehicle will use light-beam and inertial sensors to collect data about the railway track and structure as it travels at up to 80km/h.

On-board computers will produce reports for engineering maintenance as well as for long-term planning of Westrail's 5,500km of railway lines.

Acet Ltd, based in Osborne Park, develops high-technology equipment for railways in Australia and overseas. Its new track analysis vehicle will use advanced sensing technology devised in Britain and developed in Perth for local requirements. This will be the first use of this technology in Australia.

The vehicle's equipment will measure the track's gauge, cant, alignment and surface condition. It will pinpoint areas in need of attention and will be able to compare the track's condition with previous analysis.

The vehicle, which will be self-propelled via a hydrostatic drive, will be manufactured for Acet by Perth - based engineering company George Moss Ltd, an experienced builder of rail transport and maintenance machines. Delivery to Westrail is in early 1989.

ELECTRONIC AID GIVES BIG FUEL SAVINGS

The State Transport Authority of South Australia has initiated the development of a high-tech system that provides railcar drivers with constant visual advice on fuel-efficient driving.

It believes the system, nicknamed the Metro-Miser, has world-wide application.

Transport Minister Gavin Keneally said the electronic aid evolved out of investigations into energy conservation in October 1982 undertaken jointly by the STA and the South Australian Institute of Technology (SAIT) through Techsearch.

Trials of the electronic aid (now known as RDAS — Railcar Driver Advisory System) had been conducted from 1983-87.

One trial, involving 20 runs between Dry Creek and Gawler, showed that the system improved timekeeping (arrival on time) and achieved a 14.6 per cent fuel saving.

Bus fuel costs are important to the STA, which in 1986-87 used 9.5 million litres of diesel fuel at a cost of more than $4 million.

Mr Keneally said STA and Techsearch wanted to go beyond testing. The test equipment itself was not suitable for permanent installation.

Techsearch had taken out a provisional Australian patent, but neither the STA nor Techsearch had the facilities to develop RDAS commercially.

Both believed it had great potential, Mr Keneally said. It had proved to be effective in storing details of timetables and then advising railcar drivers whether they should "coast" or accelerate to keep to them.

The STA is now looking for a manufacturer to be licensed to produce and market RDAS internationally. The right manufacturer could develop the system further.

The STA stands to benefit from a share in royalties from sales, and is considering installing the units in its 2000 and 3000 class railcar fleet.

WINDOW SEAT

THE FREIGHT REVOLUTION

> "Market forces have challenged rail transport, and Australia's railways systems have responded with innovation, alacrity and responsibility."

The greatest improvement in movement of freight in Australian transport history has been the complete restructuring of interstate rail freight since 1982, according to Mr Keith Fitzmaurice, the new Chairman of the Railways of Australia National Freight Committee and Managing Director of V/Line.

"The increase in containerised traffic has been substantial — from 33 per cent of the total interstate freight in 1982 to 53 per cent at the current time," Mr Fitzmaurice said.

And fast overnight intercapital Superfreighter rail services have been responsible for this heartening trend. There is another major factor.

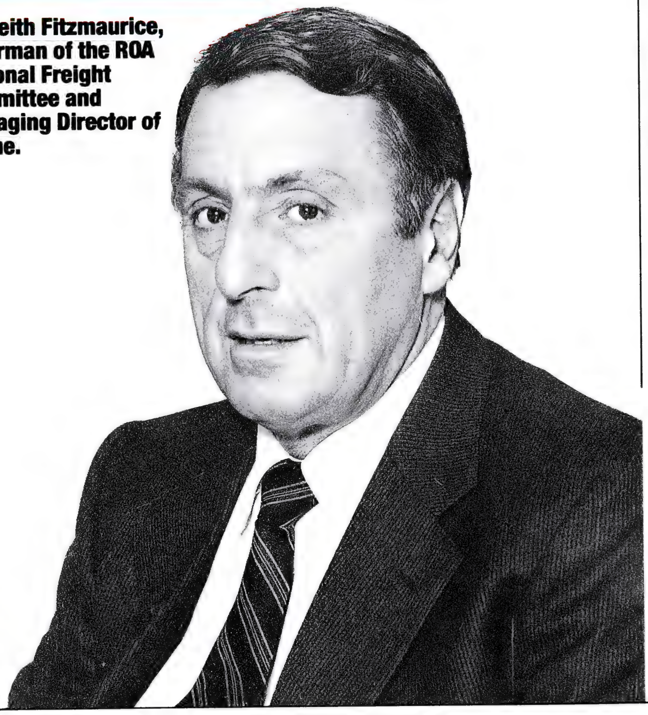
Market forces have challenged rail transport, and Australia's railway systems have responded with innovation, alacrity and responsibility.

Rail's future strategy would be to adapt this approach to other types of freight.

"Landbridging" was a typically innovative approach. In response to reduced services by shipping lines, containers were now carried between capital cities in ever-increasing numbers by Linertrains, services transporting only shipping containers.

Until May 1987, Western Australia depended on shipping for its iron and steel from the BHP plants in the eastern states, Mr Fitzmaurice said. Now 230,000 tonnes a year arrived by rail. Motor vehicles were being moved to Western Australia in specially designed triple-decker wagons.

Mr Fitzmaurice said the National Freight Group had played a big part in co-ordinating intersystem rail freight traffic. "Through this enthusiastic group marketing initiatives can be planned and implemented, benefiting the manufacturer and customer, and providing a truly efficient integrated national rail network," he said.



Mr Keith Fitzmaurice, Chairman of the ROA National Freight Committee and Managing Director of V/Line.

BRITISH RAIL SETS NEW MARK

British Rail has beaten its own world speed record for a diesel train. A test train with two InterCity 125 power cars achieved a speed of 238.1km/h over a measured mile (1.6km) between Darlington and York in northern England. This beats the record of 232.8 km/h set by an InterCity 125 on the same route in November 1986.
The record was achieved during test runs of a new bogie fitted to a modified coach. The bogie is under trial for the next generation of InterCity rolling stock, the Mark IV coaches being built for British Rail's soon-to-be-electrified east coast main line.

During the record run, the fastest speed achieved was 238.9 km/h. The train consisted of two power cars, two Mark III coaches (one with the test bogies) and BR's Laboratory vehicle. (LPS)

Once, not so long ago, some manufacturers' products were deliberately made with a very short life cycle. The idea was that they'd wear out. Be replaced. To wear out and be replaced yet again. High turnover, it was thought, meant high profits.

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Strategies BHPCPS486

New and good as new: the gleaming green Bicentennial steam locomotive number 3801 stands beside a modern counterpart at Sydney Central Station before its first run in January.

ROA VIDEO WINNER

In January this year Railways of Australia released a new 15-minute promotional videotape to the world market for inbound tourism — a market that now produces many millions of dollars every year for Australian railway systems.

The new videotape replaces a highly successful video first distributed two years ago. Completely revamped, the new tape includes The Queenslander and Westrail's new Australind, as well as the entertainment car on the Ghan. It eatures close-up shots of the hairdresser at work, the video games and even introduces the "pokies". There's a great deal of new scenic material, too, on Queensland's coastal and island holiday resorts, highlighting Australia as a holiday destination.

As well as English, voice tracks of the new production were produced in German and Japanese, no small task for the producers, Highland Productions, as both languages take longer than English for the same script. Over one hundred "dubs" have already been distributed in the world markets, and overseas agents selling Australian rail travel are delighted with the product.

Producer John McIntosh (left) and cameraman Lyle Binnie of Highland Productions film a "six-pack" and other Motorail vehicles on the Queenslander.

WINDOW SEAT

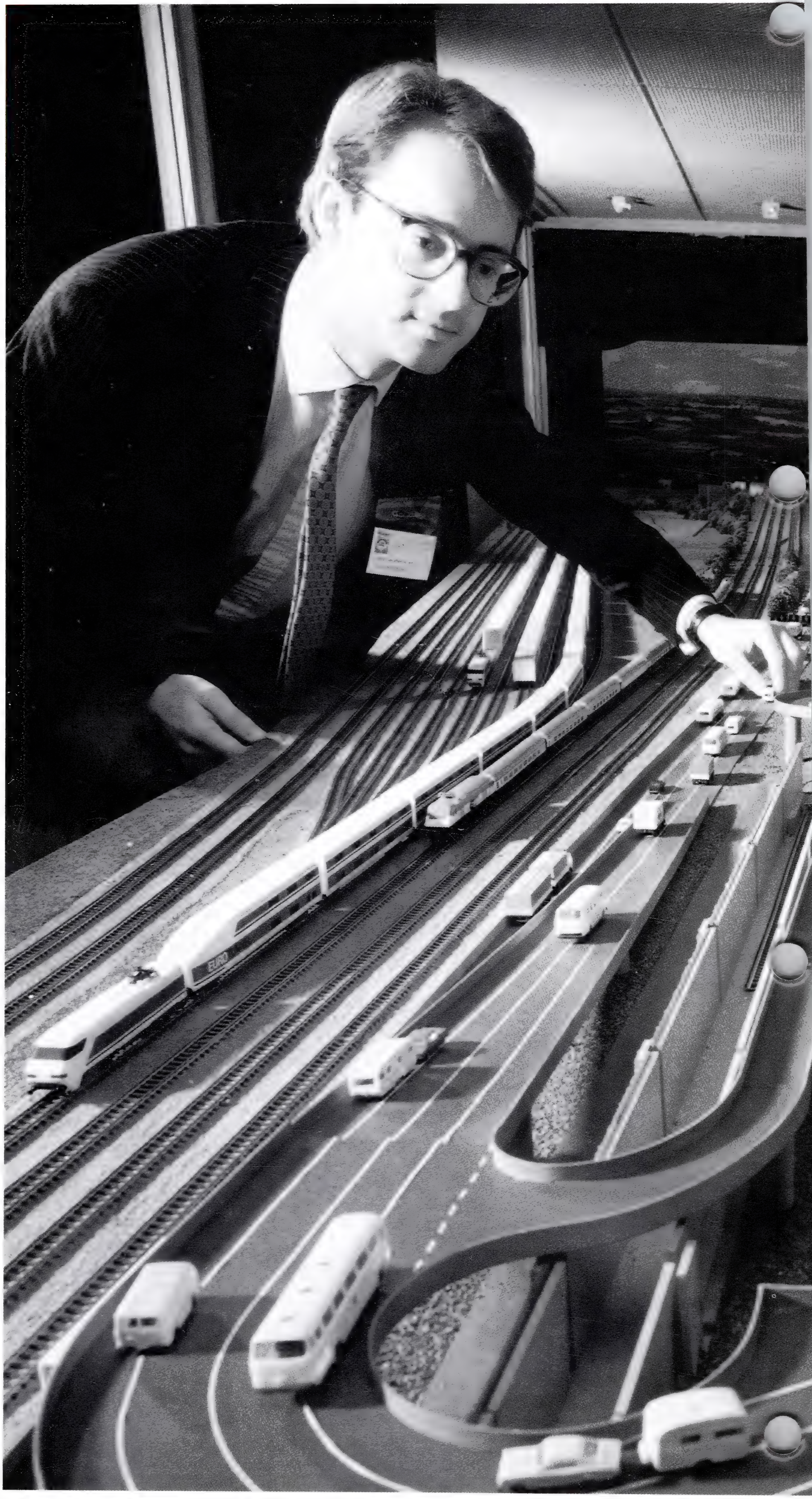
STYLE IS SET FOR CHUNNEL TRAIN

A group of leading British, French and Belgian designers is to create the "Train of the 21st Century" to run through the new Channel Tunnel that will link Britain to the European mainland in 1993.

Designers Jones Garrard Ltd of Leicester in the English Midlands will design the train's exterior, and Paris design house Design Programm and Belgian consultants SPRL INCV will collaborate on the interior design.

Eight major design firms from Britain, France and Belgium were given two months to produce designs to woo passengers away from airlines and ferries with the promise of luxury travel between London and Paris or Brussels in around three hours at speeds of up to 300 km/h.

This working model of the British terminal for Eurotunnel shows how cars, commercial vehicles and passenger coaches will join and leave the shuttle trains at Folkestone when the tunnel link with France is operational. The model represents an area of about 3km × 1km. Trains are to a scale of 1:160, N guage model railway equipment. Structures, hills, people, street furniture, 3,000 trees and 400 vehicles are used to create an authentic setting. In June, the model will go to a transport exhibition in Hamburg, Germany, where it will be linked with a working model of the French terminal.



WINDOW SEAT

SAFETY FIRST RULING IN US

The US Department of Transportation has ruled that all trains in the Northeast Corridor must be fitted with ATC (automatic train control) systems that will automatically stop the train if the driver fails to obey signals ordering the train to slow down or stop.

Carriers must have reached purchasing agreements by January 1988, and all trains must have ATC systems by July 1990.

The federal railroad administration is also considering extending the regulation to cover trains operated in corridors connecting with the Northeast Corridor, including Philadelphia-Harrisburg, New Haven-Springfield, Philadelphia-Atlantic City, and New York City-Albany.

RECORD CLAIM

French Railways (SNCF) operated a covered wagon under severe load conditions at a maximum speed over 203 km/h, claimed as the world speed record for a rail freight wagon, in tests late last year.

The behaviour of a new type of bogie wagon, to be used in the FRET 160 trains travelling at the same speeds as some of SNCF's passenger trains, was studied as part of the tests.

Powerful Experience

A Queensland joint venture for the Main Line Electrification Project

The CLYDE/ASEA-WALKERS joint venture provides Queensland Railways' Electrification Project in Central Queensland with a wealth of engineering experience. This powerful venture combines ASEA know-how and advanced technology in the field of AC electric locomotives, with the extensive experience of Clyde Engineering and Walkers Limited in the design and manufacture of rolling stock.

ASEA has more than 70 years experience in electric traction and in particular more than 15 years experience in electric traction with thyristor techniques.

Clyde Engineering Motive Power Division has been a constant supplier of locomotives and other railway rolling stock for more than 90 years. In 1948 Clyde became the first Associate of the Electro-Motive Division of General Motors Corporation to manufacture the GM diesel electric locomotive outside the domestic USA.

Since that time, Clyde has supplied over 1000 diesel electric locomotives to Australian Railways.

Walkers Limited has been involved in the design and construction of railway rolling stock since 1890. More recently they have supplied large numbers of diesel hydraulic locomotives and stainless steel EMU vehicles to Queensland Railways. A total of 280 EMU vehicles have been ordered so far, including the new inter-urban trains to run between Brisbane and Rockhampton by 1989.

CLYDE/ASEA-WALKERS is able to offer a strength of technical resource and wealth of design and manufacturing experience second to none.

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WINDOW SEAT

Message in the sky: State Rail Authority of NSW takes its freight message into the heavens.

ON THE WATERFRONT

State Rail has opened a new Rail Travel Centre at Sydney's busy Circular Quay Concourse. Located at one of the most visited areas in Australia, the gateway to the harbour, the Opera House and the historic Rocks area, the centre has proved popular since its opening on 26 January.

The Travel Centre incorporates a computerised reservation system, able to handle all rail bookings. It has links will all major airlines, car rental companies and quality accommodation throughout Australia for immediate bookings. State Rail travel consultants can advise tourists on any of hundreds of packaged State Rail tours. Holiday packages can also be designed to suit individuals.

State Rail now has seven Rail Travel centres, at Wynyard, Town Hall, Parramatta, Canberra, Newcastle, Surfers Paradise and the Quay. Twenty-three more are planned, with North Sydney, Gosford and Cronulla opening soon.

PUBLIC TO DECIDE ON ELECTRONIC BOARDS

Travellers passing through four major British Rail stations this year will be asked to judge the effectiveness of new electronic "blackboards" controlled for the first time by broadcast instruction.

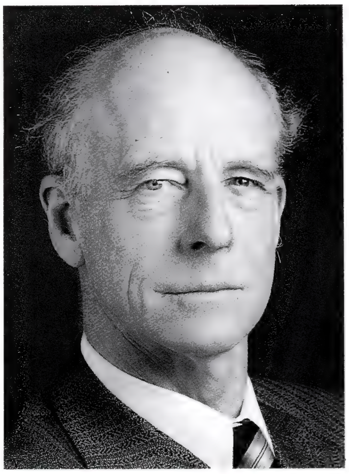
The new public information and advertising systems are at Waterloo, Victoria and Cannon Street in London, and at Brighton.

A British Rail spokesman said: "This is a pilot run for what we hope will be the widespread use of an exciting new information and advertising medium. With recent developments in broadcasting data and in selection and decoding of information, it is now possible to control electronic animated poster sites anywhere in the UK that is served by the television networks".

The 914mm by 3.6m displays will display alpha-numeric moving or "static" messages as well as full animation.

The Independent Broadcast Authority (IBA) broadcast signals will switch the boards on and off, change advertising, and provide information. Each display will decode only the information addressed to it.

WINDOW SEAT



Sir Robert Reid, chairman of British Rail, is the new group chairman of the Group of Twelve Railways of the European Community. He succeeds Mr Jack Higgins, general manager of the Irish Transport Company.

FLYING MALLARD

Railway enthusiasts from around the world are clamouring for seats on special steam-hauled trains that this year will celebrate the 50th anniversary of the wold record steam run of 203 km/h.

The record was set by Mallard, probably the most famous steam locomotive in the world, between Grantham and Peterborough in eastern England on 3 July 1938.

To cater for enthusiasts, the Friends of the National Railway Museum in York have arranged five Mallard-hauled special trains.

The first, mainly for invited guests, will run to Scarborough on the English northeast coast. The others will take enthusiasts on different runs through the rugged beauty of northern England.

Since 1983, when it was anounced that Mallard was to be restored, a railwayman from the booking office in Kuala Lumpur, Malaysia, has been sending £1 a month towards his fare on one of the runs. When possible, he has posted this in a Malaysian firstday cover to be sold to help pay for the work on restoring the locomotive.

Ninety Americans have applied for seats on just one journey, while others are coming from Australia, Canada, Denmark, France, Hong Kong, the Netherlands, New Zealand and West Germany.

Those successful in gaining places — they are all allocated — cannot expect to relive the record run of 50 years ago. There is now a speed limit of 96km/h on Britain's veteran mainline steam trains.

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NEW ZEALAND LAUNCHES THE TRANZ-ALPINE

By Roy Sinclair

A few months ago, waiting for a train to depart from Picton, I was joined by a young Londoner just off the rail ferry from Wellington. She was looking forward to the journey to Christchurch, having greatly enjoyed her trip on the North Island Main Trunk on the Silver Fern railcar.

Our train departed and, as it started the climb to Elevation, she asked if I knew when the restaurant car opened. Her high spirits took a tumble when I told her there were no refreshments served on the train.

In other countries, railways have been a fashionable form of holiday travel for some time, and visitors to New Zealand expect to travel by rail here too.

During the last decade, however, the future of rail passenger services in New Zealand has been in doubt. Suggestions that trains could attract tourists were seen as a bit of a joke, on a par with the railway pie.

Fortunately, there have been some changes. The recently formed Railways' Passenger Business Group has pledged itself to provide services that New Zealanders and overseas visitors will enjoy riding on.

The first new service, the Tranz-Alpine Express, made its debut on 22 November 1987 on the 233km journey between Christchurch and Greymouth. It is being marketed as one of the world's great rail journeys, a compliment paid to the Midland Line it runs over by a New York journalist, Rene Mack, who made the trip between Greymouth and Christchurch two years ago.

The Tranz-Alpine Express is New Zealand's first train to be designed for both tourists and regular travellers. It is not a new train, however. Four carriages were refurbished for it in the NZR Addington workshops at Christchurch.

One carriage is now an observation car, fitted with large tinted windows to provide all-round views of the alpine scenery. This carriage also has a buffet servery.

Seats throughout the train are arranged in bays of four with fixed tables in between, a layout used on many of the world's rail systems. As a final touch, seats on the Tranz-Alpine have Canterbury lambswool covers.

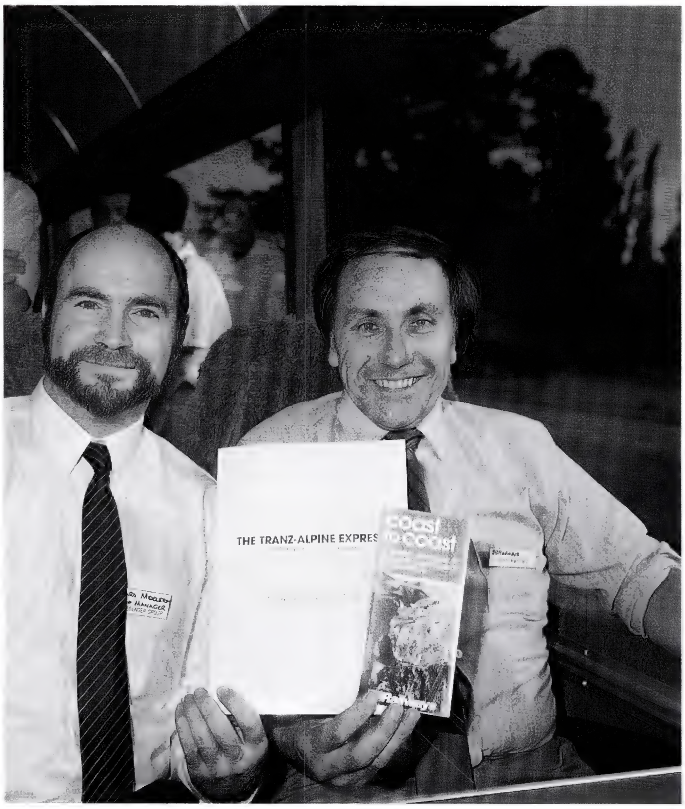
Mr Richard Middleton, manager of the passenger business group, says the train was planned after consulting travel agents and other interested people. The result is a train people will want to travel on rather than one which railway managers merely think people will want to travel on.

"Most of our train journeys go through some of the most beautiful country New Zealand has got, so let's do that in comfort and style," he says.

John Bennett, the regional passenger manager in Christchurch, believed for many years that the trans-alpine route would attract tourists if properly done. He is delighted with the train and the quality of workmanship put in by a small team at the Addington workshops.

The outside of the train is painted in the new Inter City colours, and new sets of bogies have been fitted for a smoother ride.

Imagination has been used in planning the catering. Devonshire teas, a



Richard Middleton (left), manager of the NZR passenger business group, and John Bennett, regional passenger manager, on the first Tranz-Alpine run on 22 November 1987.

Three travellers enjoy the views from the large windows of the Tranz-Alpine's observation car.

Tranz-Alpine specialty, are served at passengers' seats for a small extra charge. The tea is Earl Grey and it is served in handsome cups.

Boxed lunches can be bought from the buffet. Choices include a West Coast Lamburger, The Great Railway Pie (only the world's finest railway pies are served), a Goldminer's Lunch, homemade soup and a selection of New Zealand cheeses.

These delights can be enjoyed as the Tranz-Alpine Express crosses the high, spindly viaducts above the Waimakariri Gorge in Canterbury or travels sedately along the shores of Lake unner in Westland.

It would be difficult to find another rail journey that goes through such varied countryside in little more than 200km.

From the very English city of Christchurch, the train crosses the Canterbury Plains, threads its way above a deep river gorge, passes under the Southern Alps and completes its journey through the magnificent rain forests of Westland.

Along the way are five major viaducts and 19 tunnels.

An Australian from Bendigo in Victoria who made the trip said: "In New Zealand one starts to wonder where the train will go when the mountains start to close in. But not to worry. When a mountain finally gets in the way, the train just goes right through it."

Greymouth, at the end of the journey, is the commercial centre of the West Coast. Founded on gold in the 1860s, the town became a coal and timber port.

Some of New Zealand's best tourist attractions are on the West Coast. These include two national parks: Westland, which adjoins the Mount Cook National Park, and the recently opened Paparoa park at Punakaiki.

There are also some of the world's best fishing rivers and lakes; locals say they are so underfished that most of the trout die of old age.

The Canterbury to Westland rail route was finished in August 1923 when the 8.85km Otira Tunnel was opened. It was then the longest tunnel in the British Empire, but it is now only the third longest in New Zealand.

The tunnel opening brought to an end the last Cobb and Co coach service in New Zealand, the route over the treacherous Otira Gorge between railheads at Otira and Arthur's Pass.

Electric locomotives have run through the tunnel since it was opened, and the 13km between Otira and Arthur's Pass was the first NZR electrified railway.

Electric locomotives are still used to haul freight trains. They usually

Continued on page 62.

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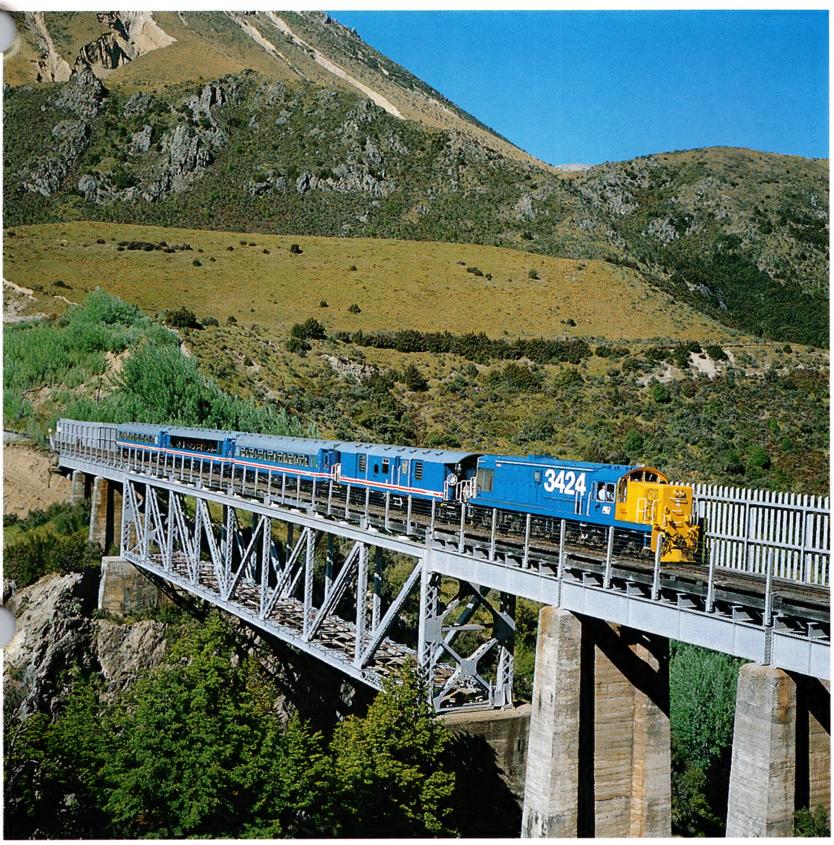


The Tranz-Alpine Express crossing the 55-metre-high Broken River Viaduct between Springfield and Arthur's Pass.

Below: Lake Sarah and the Polar Range, one of the fine views from the Tranz-Alpine as it approaches Arthur's Pass.
Pictures: Roy Sinclair.

Continued from page 59.

operate in a multiple of three and can haul 620 tonne trains on the 1 in 33 grades up to Arthur's Pass.

The Tranz-Alpine Express makes a return journey from Christchurch to Greymouth every day. Day excursions and special day return fares were introduced with the new service.

The train also provides a day excursion from Christchurch to the Arthur's Pass National Park, where about five hours can be spent between trains.

A commentary is part of the Tranz-Alpine service, but as the train gets further into Westland, passengers are more likely to be treated to some West Coast folklore.

One popular story is about an Australian (or was it an American?) who went fishing in Lake Brunner.

"He had caught half a dozen very good trout and was packing up when he saw a huge eel swimming towards him. Alarmed, he picked up a large willow stake from the bank and thrust it into the back of the fish.

"He then watched the willow stake swimming out on the lake until it was out of sight.

"Some years later when he returned to Lake Brunner for another spot of fishing he got quite a shock when he saw a willow tree swimming towards him."

The new Tranz-Alpine Express h captured the imagination of Christchurch people and many are planning trips after seeing the television coverage of the inaugural run.

Tour companies are also impressed and see rail travel as something different to offer tourists.

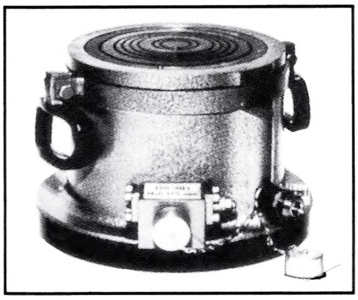
Next year the Picton Express and Southerner will complete the new look rail services in the South Island, and the Northerner and Gisborne trains in the North Island will get similar treatment.

The observation car has been a great success and bigger windows will be fitted to all carriages running on the Tranz-Alpine and Picton trains.

By mid-1988, New Zealand will have an excellent network of long-distance passenger trains and no longer will I need to shudder when an ove seas visitor asks when the restaurant car opens.

See more of the real Australia by train.
Daily Sailings
KOKATAHI BAND

The West Coast Kokatahi Band welcomes the first Tranz-Alpine Express at Greymouth on 22 November 1987.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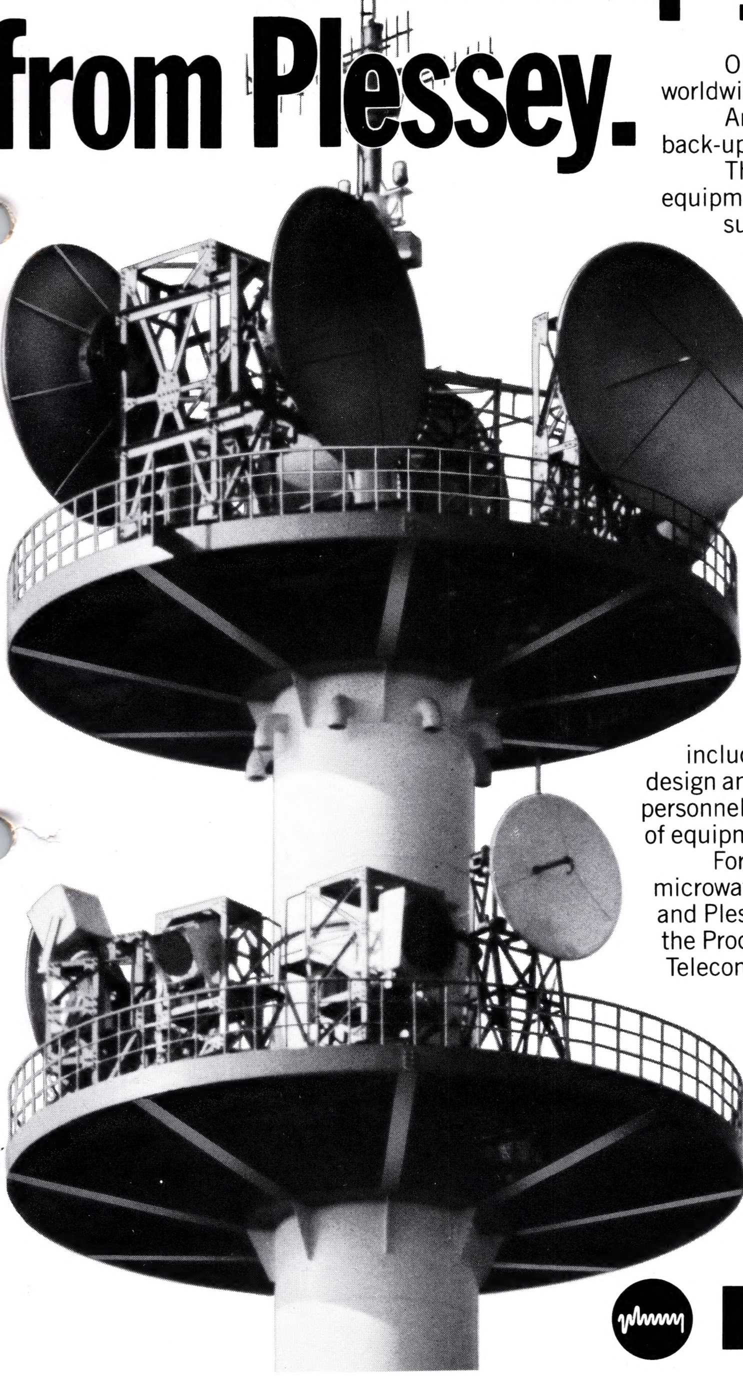

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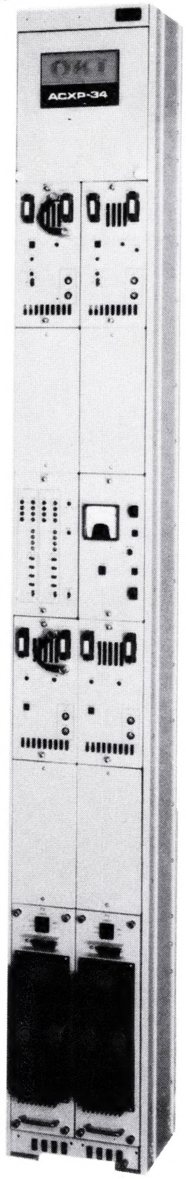

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THINKING RAILWAYS THINK AUSTRALIAN

Photo courtesy Rail Australia magazine